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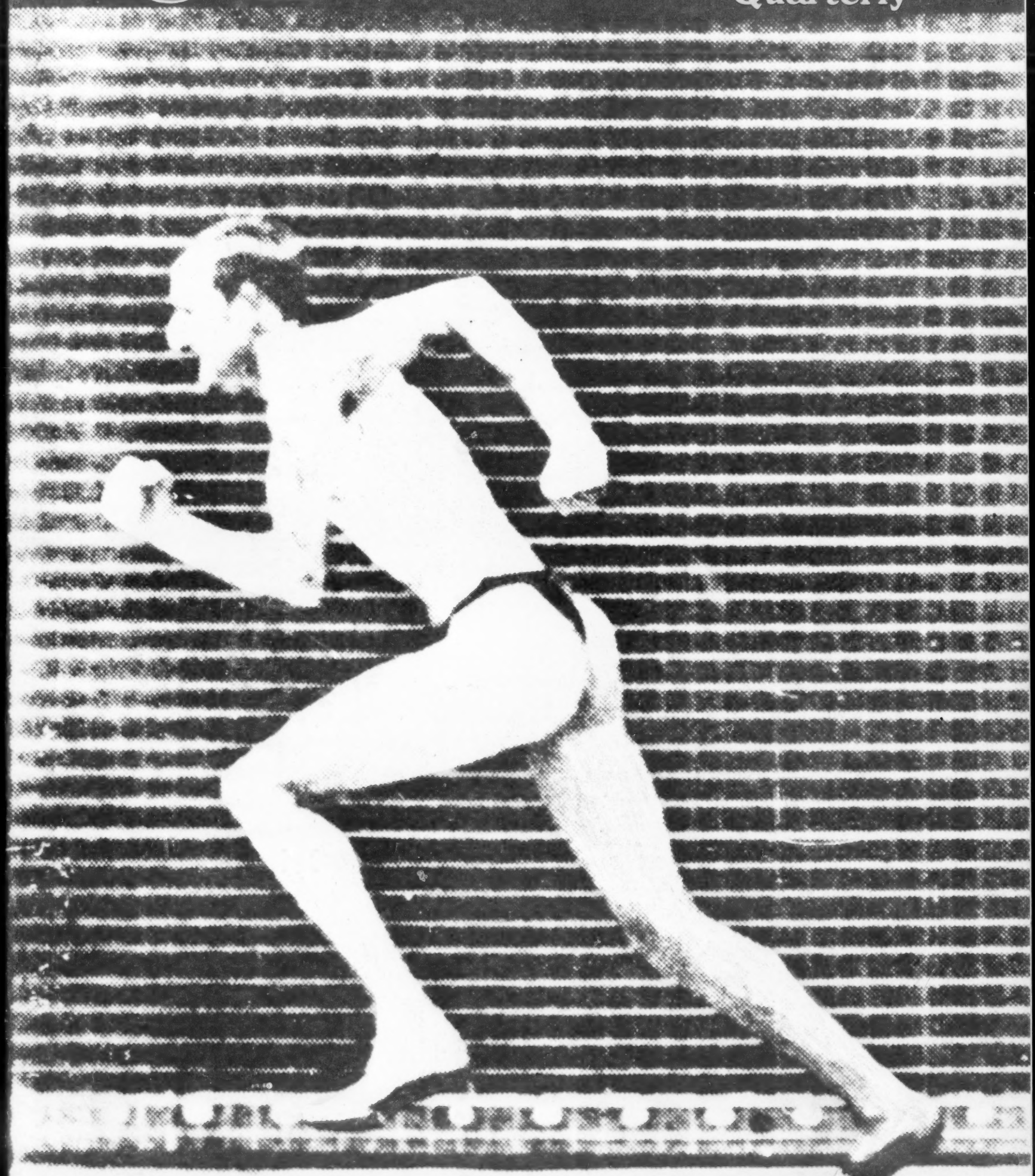
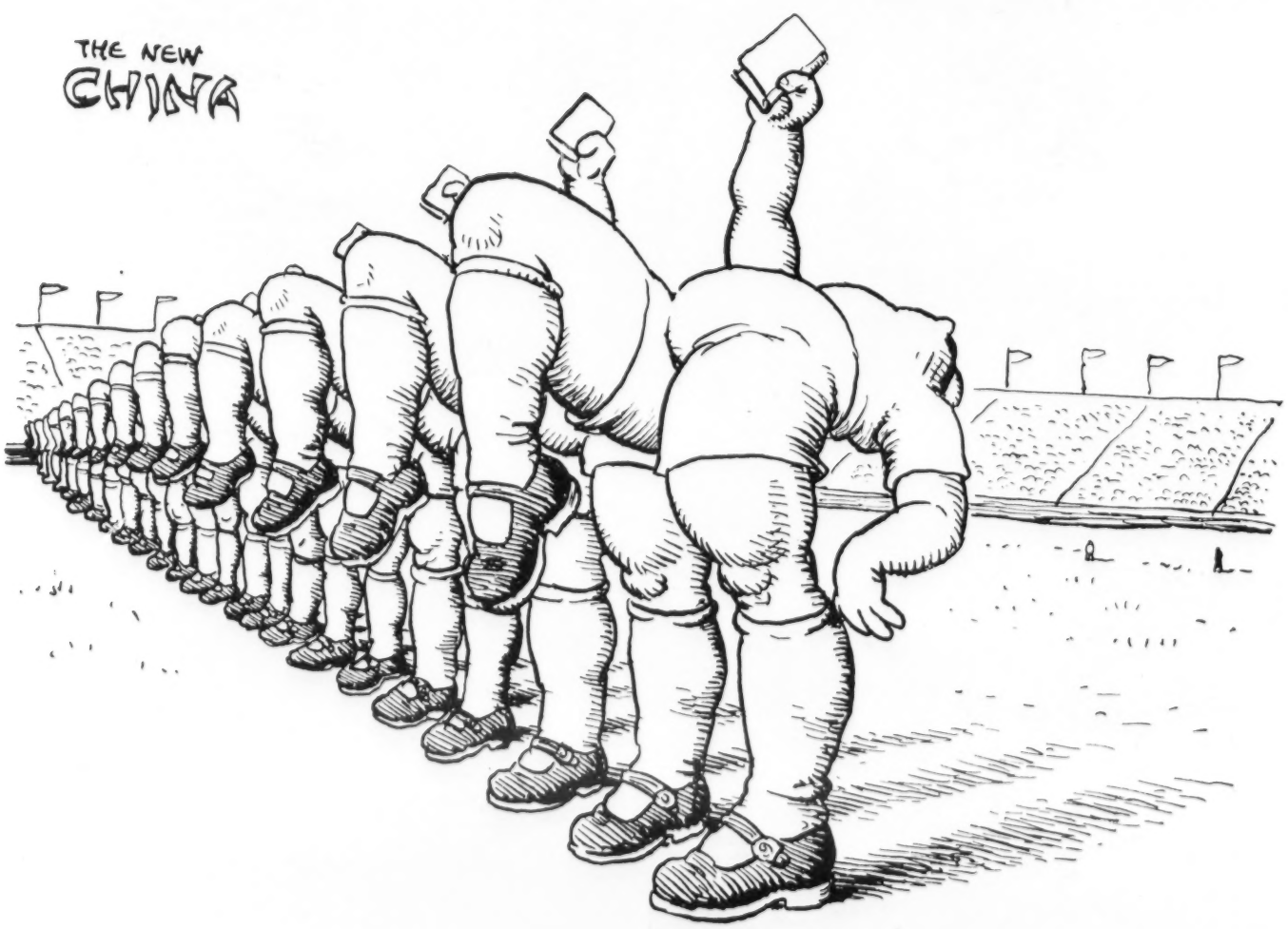


HOW TO RUN THE ARMS RACE BACKWARDS

1977 Spring $2.50
Subscription price $8/year

DRAWING AGAIN IN MY SKETCHBOOK THAT I'M SO PROUD OF....
I GOT TH' SHAKES T'DAY..
YEAH, WELL...
THAT AINT MY IDEA OF A GOOD TIME...
...AINT MY PROBLEM...
HOTEL
MONEY
LOANS
DRUG
CHOVIAL'S SCENTED GUM


THE NEW CHINA

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The COEVOLUTION Quarterly Spring 1977

Politics

0-1 From the Notebooks of R. Crumb

4-7 **HOW TO RUN THE ARMS RACE BACKWARDS** *by Stewart Brand*

8-39 **THE NEW CLASS** *Herman Kahn, Gov. Jerry Brown, Amory Lovins*

40-45 **LABOR AND ENVIRONMENT – The Australian Green Bans**
Jack Mundey talking to Ellen Newman and David Gancher

46-48 **Ecology, Capitalism, Communism** *by Jack Mundey*

Understanding Whole Systems

49 Grand Design ▪ Science News

50 The High Frontier ▪ Notes from L5 ▪ Space agriculture retort

51 **Snake** *by Anne Herbert*

52-55 **Odd Bodkins** *by Dan O'Neill*

56-71 **EXPLOITATION AND NURTURE** *by Wendell Berry*

Land Use

72 & 77 **Greywater Re-use** *by Peter Warshall*

73-76 **The Most Unusual Letter We've Ever Received** *by C. Scott Van Strum*

78 **Earthworm Technology** *by Rosemary Menninger and Steve Bridgens*

79 **Drip Irrigation** *by Rosemary Menninger*

Soft Technology

80 The Living BASICS from the UN

81 Appropriate Technology Sourcebook ▪ Economically Appropriate Technologies for Developing Countries

82-83 **Appropriate Technology – the upper case against** *by Witold Rybczynski*

83 Office of Appropriate Technology in California

84-85 **Fundamentals of Energy Utilization** *by Harold Morowitz*

86-88 **The Double Bubble Wheel Engine** *by Steve Baer*

88-89 Zomeworks Pro Heater ▪ Zomeworks Sun Tracker ▪ Day-Land steam engines A Model Used Oil Recycling Act ▪ Small Gas Engines

90 Wind-catchers ▪ Geothermal Technoecosystems and Water Cycles in Arid Lands

91 Alternative Rural Sanitation Systems SURVEY

92-93 Flannel sheets! ▪ Guardian Smoke Detector ▪ Living in One Room ▪ Instant Furniture

94-96 **The Underground World of Baldasare Forestiere** *by Joseph Torchia*

97-98 Malcolm Wells comments ▪ Pneumatic Structures ▪

99 Sun Earth ▪ Tuffak-Twinwall ▪ Serrande Shutters

100 Shurcliff's last catalog ▪ Ecosol 101 Energy Recovery System ▪ Grumman Sunstream solar hotwater system ▪ Thermic Diode Solar Panel

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Cover

Like a film running backwards, the pink gentleman sprints in slow motion into his own past. A little fiddling with the structure of the Arms Race, and it might do the same. The cover artist is the Green Man Cooperative, of Taos, New Mexico, S.N. Durkee, Co-ord., who did the CQ *covers for Winter '74 - '75 and Spring '76.*

—SB

Craft

101 Pieced Quilts of Ontario ■ Traditional Pattern Units for Quilting ■ Berman Leathercraft

Community

102 Fellowship ■ Regional wages ■ Peter Van Dresser on Decentralization ■ In Defense of Variety
103 The Simple Life ■ Legacy Books ■ Folkdance & Mixed Pickles ■ Roundhouse Records
104-105 **Yo' Momma!** *Onwuchekwa Jemie, transcriber*
106 Sane Asylum ■ Tel-med ■ A Good Age
107 Small-Time Operator & Music Works ■ How to Prepare for Death
108 The cure for seasickness ■ Blotting ■ RFD ■ Frond of Coconuts
109 **Marijuana As A Contraceptive** *by Kay Weiss*
110 **The Lefthanded Bear – more Animal Stories** *by J.D. Smith*
111 Spring and i move the cat to another chair ■ Dog flesh ■ Helpful Hints for Quitting Smoking Wellness Inventory
112-119 **THE ACORN PEOPLE – Part 2** *by Ron Jones*

Nomadics

120 Bickerton Bicycle revisited ■ Golden Bear MK 2 Bike Locking Cable
121 The Mariner's Catalog Volume 4 ■ The Craft of Sail
122-123 **Standing Wave** *by Scott Thybony*

Communications

124 Rolf Cahn gives guitar lessons by tape ■ Computer Power and Human Reason

Learning

125 Infants and Mothers ■ The Whole Kids Catalog
126 Ranger Rick's Nature Magazine ■ Fifth World Tales
127 Teachers and Writers Collaborative ■ How to Make Your Own Educational Materials
128-131 **BENNY** *Benny Divenis interviewed by Dan Cassidy and John Levin*
132-134 **OBEYING CHÖGYAM TRUNGPA** *by William S. Burroughs*
135 Comment from Jonas Mekas ■ At a Journal Workshop ■ Journal
136 Castenada's Journey ■ The Zetetic
137 Passages ■ Meditation timer ■ Gamesemag
138-140 **The Work of Idries Shah** *by James Fadiman*

Business

141-142 Thank you ■ Help ■ Financial Reverses at CQ
143 Gossip ■ Grassroots Distribution ■ 'Or Whole Earth'
144 Masthead ■ Change of address sermonette

HOW TO RUN THE ARMS RACE BACKWARDS

It's simple enough. See to it that the underdog always wins.

by Stewart Brand

A dog that hasn't been chained up long forgets. It rushes across the yard and then – bang. Today when people become excited about the future and involve themselves with new uses of technology they often get carried away with hope – then bam – they think about the atomic bomb, the H bomb, the ballistic missile. Today, like the dog, we all have the chain on us. There is nothing very marvelous going on unless it is something to untie that chain.

–Steve Baer

You Can Make Money Demonstrating Arms Races

TELL SOME PEOPLE (friends, students, audience, whatever) that you're going to auction off a $5 bill. Highest bidder gets it.

"Oboy," says the suckers.

"One stipulation," you add. "I get the money from both the highest and the second-highest bidders." "Hm, OK," says the suckers.

The bidding begins. "10 cents!" "20 cents!" "30 cents!" It continues. "$1.50!" "$1.75!" People may or may not notice when it goes past $2.50!," at which point you're making money.

They will notice when the bidding goes past $5. It will inevitably do that because whoever's just had his bid of $4.50 beat by someone bidding $4.75 stands to lose his $4.50 and get nothing. If he bids $5.10 for the $5 bill and wins, then he only loses 10 cents.

Unfortunately the now second-highest bidder stands to lose all of his $4.75 bid and get nothing, and he raises the bid. So it goes, indefinitely. You can sell your $5 bill for a lot of money. I've done it. Its market price is essentially infinite.

You've set in motion an Arms Race, a cybernetic runaway of positive feedback – the more, the more. (Negative feedback would be, the more, the less.) Once past $5 the bids become increasingly radical – "$7!" "$10!" "$20!" – as each party tries to annihilate the hopes of the other.

Everybody loses (except you, the arms manufacturer). What keeps the bidding going is each bidder's fear of losing more than the other fool – to quit, pay over the losing bid of $40 or whatever, and get nothing! Pity, maybe.

Watch the loser. He may in vengefulness try to start a different contest with the winner which he might win. He may look for another set of people to pull the same trick on himself. Or he may puzzle at the phenomenon and look for its solution. Even winners might do that, in view of the cost of winning. . . .

Context

WITHIN THE STRUCTURE of an Arms Race there is no formal solution. They run to exhaustion. The place to look for relief is the context in which they are embedded – the language of the rules of the game and the cultural valuing of its conduct.

The present international rules – the real ones – are still pretty much what was established at Versailles in 1919 when the Allies went back on their promises to the defeated Germans. The rules are: anything goes. That principle lived on in President Johnson's Vietnam policy, "When you got 'em by the balls, their hearts and minds will follow." Interestingly, it was not the slogan of the winning side, but considerable expenditure of life and treasure was made in its service.

Is faith in the devil rewarded? Yes, but never for long.

My generation – I'm 38 – grew up expecting nuclear devastation. The earliest dream I remember is of Rockford, Illinois, my home, obliterated by Russian atomic bombs. (The town fathers were ambivalently proud that Rockford was supposedly seventh on the Russian list because of our machine tool industry.) In my dream I always survived to search through the exciting panic and rubble for the lost fragments of myself – friends, family, familiar places.

The thrill of World War II was not repeated in our lifetime though it was faithfully awaited. Hiroshima spawned a generation of apocalypse buffs whose fantasies by the '70's have convoluted into full absurdity. We have wished, we ecofreaks, for a disaster or dramatic social change to come and bomb us into the Stone Age, where we might live like Indians in our valley with our localism, our appropriate technology, our gardens, and our home-made religion, guilt-free at last.

There's nothing wrong with that goal, except the notion that a disaster or revolution will make it possible. Comes any crunch at all – war, famine, serious depression – the first to go will be all our environmental accomplishments and any equity, any democracy, any localism, any grace. We can be pro-environment or pro-apocalypse, but not both without being grotesque. Some of us have done that – I for one – and some knew better. In any case the attitude seems to be passing.

What's the point then? The point is that the Arms Race is not taken seriously enough by our social innovators to try to do

anything very radical about it. When it is not unconsciously worshipped it is perceived as too abstract, too remote, old hat. It is all those, but consider the effort that goes into stopping nuclear reactors in the U.S. and compare the likelihood and magnitude of radiation hazard from the use of nuclear reactors versus the use of nuclear weapons.

I figure that people are fighting nuclear energy as the only accessible toenail of the nuclear arms dragon. The reactors stand for the weapons because we feel helpless to do anything about the weapons.

Worldwide, there are just a few hundred people, outside foreign offices, working full time on disarmament issues. Regrettably, far more attention is paid to other major world problems – such as energy, the environment, development, population, and so on. A relatively large fraction of the few hundred disarmament scholars is Soviet. In the non-Communist developed countries disarmament is not a popular subject for study.

–Frank Barnaby
New Scientist

I do not think that environmentalism can get very far while this situation prevails. People do not sufficiently believe there is a future to conserve for. The main article of their disbelief, reasonably, is the persistent growth of nuclear mega-tonnage whose only function is to destroy whole systems.

Try a fantasy experiment. Imagine our present life and behavior with only one change – the confident absence of expectations of apocalypse. Imagine having creatively in mind the conduct of your family, neighborhood, business, town, county, state, nation, world over centuries of adaptation that you can work on now.

If that vision surprises you or leads you to thoughts you haven't had, you've got a picture of the present opportunist (get it while you can) context of arms uncontrol. Not promising. . . .

Weapons Addiction

GREGORY BATESON has drawn the formal parallel between an Arms Race and drug addiction such as alcoholism. In each case the perpetrator/victim buys short-term relief from his predicament at the cost of a subsequent worse predicament which demands even more relief – "I drink to forget I'm an alcoholic." And each case is a battleground of fictional adversaries – the alcoholic "versus" his pride, one body of people "versus" another.

So far the closest thing to a cure for alcoholism is the "ad hoc religion" (Gerald Heard) of Alcoholics Anonymous, which can force the surrender of the drinker to the fact of his alcoholism, to the care of a Higher Power, and to sustained care and shared responsibility with others who've been the same route.

There may well be an analogous cure for the Arms Race. Herman Kahn proposes something of the sort on p. 26 of this issue – gradual decommitment of nuclear threat by the U.S. and gradual increase of ecological consciousness as a religion which taboos nuclear weapons.

It's worth noticing that such a religion would have to be a practice religion like Hinduism or Buddhism rather than a revealed religion such as Christianity or Islam. Revealed religions generate, and probably require, enemies – we've got the Word; you don't; off you. In the cause of world peace you can forget about finding, or being, a Messiah. What's called for is a world set of religions of immanence rather than transcendence, based on personal observation and responsibility and love of worldly detail as the handiest handle on the infinite. That's one avenue of cure. . . .

Victory of the Underdog

ANOTHER AVENUE, less grand than religion but still contextual, is a bit of tinkering with the structure of the Arms Race, which can't be done by people busy fighting within it. It is after all a war of anticipation. In the projected showdown it is assumed that Biggest-Gun-Wins. Therefore each side kills itself to maintain the Biggest Gun.

Imagine a situation in which everything is the same, except both sides believe that Smallest-Gun-Wins. In the $5 bill auction it would be the same as changing the rule once the price was way up there, to "second highest bidder wins, but I still get both bids." Would incremental increase change to incremental decrease? (It would in the changed auction if the bidders were by now so mad at each other that each wanted to win and make the other guy suffer a humiliating loss. That might be the Arms Race solution. In the auction the first party to really catch on and bid "one mill!" would win.)

Try changing just that element. You still have confrontation and conflict and still have all the causes of war. Here it may be timely to quote some of Geoffrey Blainey's observations from **The Causes of War**:

Wars usually begin when two nations disagree on their relative strength, and wars usually cease when the fighting nations agree on their relative strength. . . .

Any factor which increases the likelihood that nations will agree on their relative power is a potential cause of peace. One powerful cause of peace is a decisive war, for war provides the most widely-accepted measure of power. . . .

[more →]

The unarmed imperturbable British bobby has a moral authority other police don't.

A formula for measuring international power is essential: ironically the most useful formula is warfare. Until the function of warfare is appreciated, the search for a more humane and more efficient way of measuring power is likely to be haphazard. . . .

While the breakdown of diplomacy reflects the belief of each nation that it will gain more by fighting than by negotiating, the breakdown of war reflects the belief of each nation that it will gain more by negotiating than by fighting.

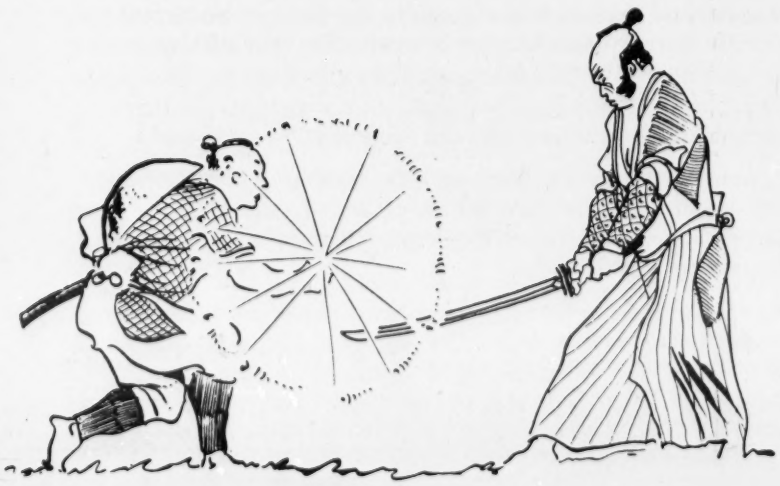
The keywords here are "gain" and "relative strength." Gain what? Relative strength in what? If the only place that power comes from is out of the barrel of a gun, then the answer is obvious, tautologous, and insane.

But suppose it meant "gain in the eyes of the world" and "relative strength of character." There's no doubt you're still talking about competition and important international stakes, but the mode of threat and battle might become radically different.

It's already happening.

The underdog won in Vietnam through relative weakness of arms and strength of character. The U.S. lost through strength of arms and weakness of character. We played the part of the bully, and in the eyes of the neighborhood we were despicable. Power in Southeast Asia came from some other place than the barrel of a gun.

You could make a similar case about Castro's Cuba or about Israel (to some). What's going on? Apparently it's a more mercantile, less military, world than it used to be, and information can get around rapidly and widely enough for there to be such a thing as World Opinion. And rather suddenly it is powerful. The world can put enough non-military pressure on an interventionist U.S. or a White-ruled Rhodesia to change behavior. It can probably do the same thing with rewards. (Is anyone studying that?)



What keeps the U.S.-Soviet Arms Race going then? World Opinion holds both nations in contempt for their "obscene" weapons stockpiles. Well, as anyone knows who's been around one, a psychosis has a life of its own. I mean that pretty literally. It generates its own universe dynamically capable of denying truths obvious to others (such as the leaders and citizens of the insane nations). In theory that can go on forever. In the real world it doesn't. Given enough contact and time the hysterical system eventually reconnects.

If this line of argument is correct, then the way to cure the Arms Race is to increase the power of World Opinion and its moral authority. Let it punish with bad odor and boycott and insults to tourists any nation that relies on massive weaponry, massive imprisonment, institutional torture, severe inequity, or other wrongdoing. Let it revile those who gain military victory by overwhelming force of arms. Let it reward its gallant underdogs and its good citizens with praise, trade, respect.

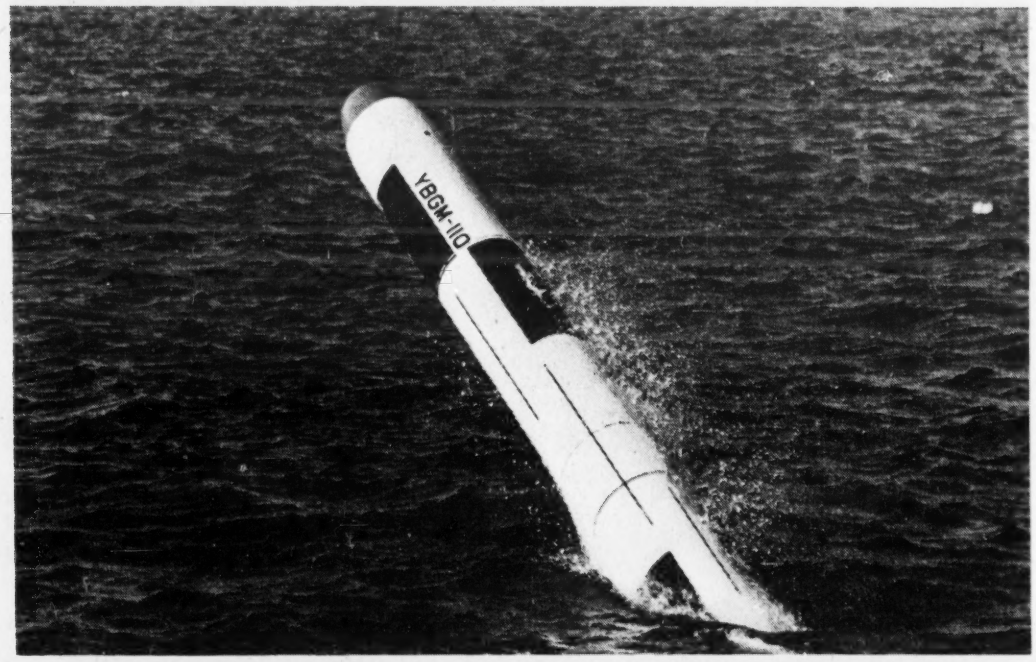
For this to work there must be swift accurate assessment of what's actually going on in confrontation situations. Lazy or controlled press is a sin. Secrecy is a sin (compare World Opinion on the Soviet and U.S. Space Programs). Favoritism is a sin (if torture is evil in Chile, it is evil in Rumania). Ignorance is a sin in a different way than it used to be.

World Opinion needs better information, more leverage, and fuller recognition of its power. Maybe it needs something like the Nobel Committee to articulate its views, maybe not. Maybe it needs to establish modes of token warfare, maybe not. It probably does need world-wide polling on issues. It does not need a bigger gun. It does need a lot of work, which it will reward. . . .

Local Disarmament

IN AMERICAN CITIES there is a miniature Arms Race going on between the cops and the robbers, egged on by TV shows such as "S.W.A.T." (Special Weapons and Tactics). If what I'm saying about Arms Races is true, the city might be an arena to test it. A gun is like a bomb – it causes more irreversible damage, such as death, and more innocent victims.

Ken Kesey, the Oregon novelist who did time in California on a dope charge, suggested this fall that cops have too important a role in society to rely on weapons to enforce. He cited the history of the patient unarmed British bobby, who has never lost the respect of the people, versus the American policeman,



A cruise missile off Southern California — no moral authority whatsoever.

who has never quite gotten it. A shooting in England remains rare enough to be front page news when it occurs.

What if some city initiated an unarmed police squad, voluntary presumably? The patrolmen and women would have to rely on their wits, familiarity with their beats, neighborhood help, skill in martial arts, and guts. It would be hazardous duty. But the moral authority they would acquire would be worth it. A lot of urban crime is by kids, a lot of it has to do with pride. In a pride race the unarmed cop is ahead.

The inevitable TV show might even be all right.

Nice idea maybe, but how the hell do you implement it? Something like this has to be initiated by police somewhere, and that seems unlikely. It'll probably never get tried.

Except it's being tried somewhat in a town in Orange County, California, called Santa Ana. In the two years that Police Chief Ray Davis has been on the job – according to a report in **New West** – he's increased the force by 30% (largely minorities) to a total of 327 regular officers and 129 uniformed but unarmed "service officers." (Santa Ana's population is 180,000, racially mixed.)

The program is called COP – Community Oriented Policing. It "puts small teams of police officers into well-defined neighborhoods, and encourages cops and civilians to get to know each other." Formerly the Santa Ana force suffered from lousy morale and "had a reputation for kicking ass and taking names. They were quick to draw and fire their guns in delicate situations."

Result after two years? Serious crime is reduced 20.7% last year, replacing the former yearly increase. Forcible rape was down 53.6% in the first nine months of 1976. Officer-involved shootings are down 60%. Morale is up. One patrol officer comments, "I wouldn't work anywhere else in the country – they might have new patrol cars every year, but they don't have kids coming up and calling you by your first name. . . ."

The Grain of Intelligence

"GRAIN" AS IN COARSE-GRAINED or fine-grained. It means the size of the perceptible texture. If there is an underlying message in the array of Whole Earth publications it is, "Think Little": live fine-grained

You can see it in a New York skyscraper – a dazzling intellectual achievement of size and design. But when you look close there is little to admire – nothing quite works. The design intelligence is elsewhere, congratulating itself up on top maybe.

Modern strategic and tactical weapons are astonishing instruments, interesting to analyze, fun to play with. But actual war conducted with them is more brutal than anything we've ever known. The intelligence of war, except for espionage and guerrilla activity, is now grossly coarse-grained.

Is that bad? It is if war is meant to be some measure of a people's character. There is no place for a samurai code or a fighting sailor's heart-of-oak in an arsenal or conflict of intercontinental missiles. Those are merely a measure of wealth, which is the opposite of character.

Maybe war can be abolished. I doubt it. But it can surely be made human again by revaluing its conduct. If people want to fight, and some do, let them do it hand to hand or prove their case with sailing ships and unrifled cannon, where only innocent waves are shattered by missed shots, and the valor of the combatants makes the difference.

I'm not kidding.

The rule of grain is: If you take care only of abstractions, the details will defeat you; if you take care of the details, the abstractions will take care of themselves. . . . ■

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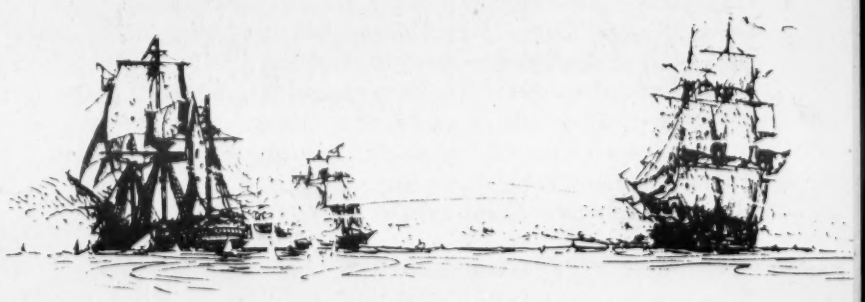


THE NEW CLASS

Kahn: A war of the New Class against the middle class — when you look at American politics that way, everything falls into place.

HERMAN KAHN GOV. JERRY BROWN AMORY LOVINS

Herman Kahn: If you ever want to impress an audience as being very profound, use big numbers. Start with the comment, "There are 10 billion stars in the galaxy." You've got to be impressed. Nobody can count that high. Or say, "There are a billion galaxies in the Universe." If you aren't impressed by that there's something wrong with you. Or start off with the remark, "Man has been on Earth for 2 million years. How many studies go back that far?"

I'll start right there. Man has been on Earth for 2 million years. I've studied every one of them. An exhausting job. I noticed only two incidents of any interest. The rest were trivial. I'm sorry to say this meeting is not one of those incidents. The two incidents are the Agricultural Revolution of 10 thousand years ago and the Industrial Revolution of 200 years ago.

Two hundred years ago mankind was everywhere poor, everywhere scarce, everywhere powerless before the forces of nature. Two hundred years from now, barring bad luck and bad management, mankind should be almost everywhere numerous, almost everywhere wealthy, almost everywhere in control of the forces of nature. To clarify, we would guess that mankind will stabilize at about 15 billion people, give or take a factor of 2 — that is 7 or 30 billion. Don't let 30 billion frighten you. It isn't like those experiments with rats in laboratories. There's plenty of room for all.

What do I mean by plenty of room for all? Well, everywhere except India and China, we can live within suburban sprawl. You don't like suburban sprawl? I'm sorry for you. It seems to be very much the future. We expect per capita income to level out at about $20,000, give or take a factor of 3. That gives us a gross world product of about 300 trillion dollars, give or take a factor of 4 or 5. Now, how sure are we of these numbers? We're absolutely certain.

In a book I wrote with some colleagues (**The Next 200 Years**) we proposed that there is a reasonably high likelihood, no certainty, of a kind of a transition in the curves of population and gross world product. In other words if that happens we'd have a zero growth world. But not because of shortages of supply, but because of shortages of demand. People don't want to grow any more. Why don't they want to grow? Because they're at a very high level. My own guess is that in the United States in the next decade (if you happen to have an extraordinarily good performance by the government, which you

In recent months Governor of California Jerry Brown has invited to Sacramento a number of intellectually luminous characters — Buckminster Fuller, Milton Friedman, Carl Sagan, Wendell Berry, E.F. Schumacher, Ivan Illich, Scott Burns, Steve Baer, James Watson, Nicholas Von Hoffman, Hazel Henderson, Peter Drucker, and others. Some of them he met with in private on weekends. Others gave a talk in the Governor's Council Room, at lunchtime or after working hours, to an audience of the Governor's staff, cabinet, and department heads. Kahn, on Dec. 1, 1976, was one of those.

Herman Kahn is to American political intellectuals what Tom Wolfe is to the journalists. Both immerse themselves like anthropologists in field experience and impressions and let their perception grow from that rather than strictly from ideology. As a result they are more open, less predictable, and far more informative than your standard idealogue. When it comes to political, social, military, or economic analysis, there is no view I'm more interested in than Kahn's. In addition — and this may or may not come across in print — Kahn has an engaging charm and wit in person that makes even hostile audiences laugh with him. Of the 15 or so lectures at the Governor's Office this was the most uproarious.

Till 2 a.m. in the Governor's office. Left to right, Amory Lovins, Herman Kahn, Elizabeth Coleman (Governor's press secretary), Jim Harding (assistant to the Energy Commission), Jerry Brown, and Gray Davis (Brown's Chief of Staff). Photographs by Stewart Brand.

may have, by the way) you should see about 6% growth. But I expect by the end of the century to see it down to 3%. And I'll use similar numbers for the world economy.

Now, the most interesting thing about the remarks I'm making here, is I've put ourselves right in the center of the process. I said 200 years ago and 200 years from now, right? Was I kidding there, or was I serious? I'm absolutely serious. Let's take the curve of population – actually the log of the curve. You see a unique point in world history. You know that people date their calendar from A.D. or from Abraham's trouble with God, or from the Hegira, or Buddha. If we ever have a world calendar, I would pick that particular point where the transition point occurred from increasing growth to decreasing growth. Does anyone here know what year that point is? If you use UN data, it's this year. In other words, this is the year the Messiah came back.

We'd expect a similar point to occur in the gross world product somewhere in the 1980's, but in this case we admit to a great deal of uncertainty. You all have heard about the population explosion, but actually the most interesting thing going on in the world has been the gross world product explosion. Since 1950 gross world product has grown about 5% a year. That's a factor of 2 in 14 years. It's a factor of more than 10 in 50 years. More than 100 in a century. More than 10 thousand in 2 centuries. That's not 10 thousand percent. It's a factor of 10 thousand, it's a million percent. Now, I'm not particularly a limits-to-growth enthusiast, but I assure you 200 years from now I do not expect to see 10 thousand times the gross world product. That pace cannot be maintained. It's just a fantastic pace. People ask me, "If this thing is so successful, how come you haven't made everybody rich?" I say, in all of world history you've never seen a more rapid process of making people rich.

Since 1950 we have brought about half the world into rich or middle-income type nations – above $2,000 per capita. That's a very impressive figure. The system shows every sign of success, except one. It never celebrates. In 1960 the UN suggested 5% growth for the poor countries as a goal. As far as I know, no one took it seriously. It was just one of those fake goals. How do you suppose they did? They did 5-1/2%. Did anybody attend the celebration? Raise your hand if you attended the celebration. You know, this culture doesn't celebrate.

[more→]

Amory Lovins is presently the standard-bearer for energy-conscious environmentalism. His trilogy of books, **World Energy Strategies, Non-Nuclear Futures** *and* **Soft Energy Paths** *(forthcoming) make the best-documented, well-argued and persuasive case for an energy conservative world. He recently published in* **Foreign Affairs** *(October, '76) a landmark paper, "The Road Not Taken," which was reprinted in* **Not Man Apart** *(November, '76), along with David Brower's nomination of Lovins for a Nobel Peace Prize.*

What is printed here is about one-third of the original 8-hour transcript. I left out, for the most part, the quantitative dialogue between Lovins and Kahn – an entire separate debate on percents of inflation, thousands of cubic feet of natural gas, and quadrillions of BTUs – in order to focus on their more qualitative discussion on the state of western culture. My mythic image is of the pair advancing on each other in a dusty street, the big trail boss and the canny squirt from the city, hands poised above their pocket calculators. Lovins in fact does carry his in a holster. Kahn packs two.

–SB

Kahn: If we ever have a world calendar, I would date it from the transition point from increasing population growth to decreasing growth. If you use UN data it's this year. In other words this is the year the Messiah came back.

We ask ourselves, "Can we give people energy?" I can write no plausible scenario, barring the bad management I'll talk about in a second, for any energy shortage lasting more than 20 years. If you get dependent on the Middle East and they turn off the spigot, it takes you 10 or 15 years to fix that problem. If you do nothing about it, it takes you 20. If you really do nothing about it, it may take you 25. But it's very hard to imagine people doing nothing for 25 years. Now, as I get older I can imagine it. When I was younger I just couldn't.

I had an experience, about 8 years ago, of being a member of the Governor's commission over New York City affairs. We predicted what was going to happen, but it took – in my judgment – 12 or 13 years of dedicated mismanagement to put New York where it is today. If they had left out one of those years, it would not have happened. You can do it, but you have to work at it. I've had many people tell me that as New York goes so goes the nation. As New York goes, so goes Newark and Yonkers. I know of no other places that are going the same way. My friends tell me now I have to leave out Yonkers.

We have about 7 or 8 eternal sources of energy. Four or five of them should be competitive before the end of the century.

Voice: What are those?

Kahn: Well, first of all, solar heating: that's competitive today for half the country. Direct conversion of electricity should be competitive in the middle-to-late '80's. Bioconversion is roughly competitive today. "Roughly" means a big effort. I don't like bioconversion because I don't like to use up land for that purpose, but that's another issue. Ocean gradients will be competitive when you get interest rates down to 2 or 3%. I think this is the long-range rate of interest. The wind is – useful. These are all basically solar. There are 2 or 3 geothermal. Then there's fusion, breeder reactors, and (if you're willing to believe just one idea, which I think is in the cards, that within this century that you'll be able to get uranium out of shales, granites, and sandstones for about $200 or $300 a pound) normal reactors. When I say energy's available, I mean basically at less than 5 cents a kilowatt hour – in '75 dollars. At less than $5/million BTUs. If it goes over that, it's not available. "Available" has an economic connotation.

Material sources appear scarce, but they become readily available with the nodules on the sea bottom. You can take all the copper, manganese, nickel, cobalt, anything you can possibly use, and the nodules still grow at roughly 10 million tons a year – more than any of the utilizations will ever be. Now, you don't need that in order to make the case. You need it to make the case terribly persuasive.

Now all of this is Earth-center perspective. We had another big shock when we wrote the book. None of us like outer-space as a particularly exciting thing. It turned out that if you can't solve the problems on Earth, you can solve them in space, as far as we can see. We're not sure of that statement, but it looks like a reasonable statement. Well, if you make that, that's a cop-out. It destroys confidence. So we talk about the Earth-centered perspective in the book.

We did a quick study, by the way, it was rather superficial but very persuasive. We asked ourselves the following questions. What would have the elites of any period in the last thousand years in a western country thought of their world a hundred years later? In all cases we think they would have disliked it. The fact is that we may dislike the world a hundred years from now – so what's new? We do not choose the future. We make the future, that's true. But we do not choose it. The thing has its own momentum. You may be able to guide it, affect it, move it, change it, but we do not choose it. It's very important to understand that. You do the best you can, but don't kid yourself, you are not God.

THE NEW CLASS

Now let me go to a quite different subject. We have two studies going on at the Hudson Institute today which I find terribly interesting. The first is on the New Class, being done by Barry Bruce-Briggs and others, including myself. Let me define the New Class for you. The term was coined by Milovan Djilas to mean the upper levels of Yugoslav intelligentsia, who he felt were ripping off the country. We're not using it that way, but it's close. In our sense, the term is used by Bazelon, by Podhoretz, by Kristol, a few others. It was also noticed by Marxists and you'll find lots of references during the last hundred years to this concept.

Think of a group of people who come from upper middle class backgrounds, from families who are largely education-oriented, so they see that the children go to the good schools and who, after they get out of the schools, earn their living by the use of academic skills, language skills, esthetic skills, analytical skills. They don't earn their living by being entrepreneurs, businessmen, engineers, laborers, clerical workers. If you are staff here, you are probably New Class to some extent.

Now, we are defining a class. Classes are never homogeneous. You must understand that people can assimilate into a class. They don't have to have the same ethnic origins as the majority. We've put together a fair amount of evidence, part of it just anecdotal, arguing that the New Class in the United States largely has the following religious backgrounds:

Herman Kahn

secular Jewish; Presbyterian; Congregationalist; Episcopalian; northern Methodist; Quaker; Unitarian; and haute-bourgeois Catholic.

This group preserves the division in American history which goes back about 150 years. The basic reigning doctrine of the New Class first emerged in the mid-1870's, the Transcendentalists – Emerson, Thoreau, people like that. If you read them today, a remarkably high percent of their writing reads like it was written by Marcuse. It's a doctrine which believes in the Unitarian faith: there is at most one God, and we worship Him if He exists. It's a hedge.

This is an increasing class in the United States. They came into power with the Kennedy administration, in the early '60's. They went sort of crazy in the mid-'60's, and this brings me to the second book I'm writing: **1965-1975, A Decade of Social Malaise and Educated Incapacity**. Let me take the second term first. It comes from Thorstein Veblen, who used the term "trained incapacity" – by which he meant many things, among which was an inability of engineers and sociologists to deal with simple issues which they could have dealt with if they had not had graduate training. Is the concept clear? "Educated incapacity" is a much more pervasive kind of thing, where your whole educational outlook, starting with your upbringing, childhood, everything, makes it almost impossible for you to deal with most of the obvious points of American social life today.

Now let me test your skill as politicians. There's a certain individual in American political life from roughly 1967 to about 1973 whom something like 80 to 90% of the American people claimed they admired for speaking out on the issues of their lives that bothered them the most. Now 80 - 90% is a pretty high percent, right? So you ought to be able to know this individual. How many people know, with a reasonable degree of confidence, who I'm talking about? Yes?

Voice: George Wallace.

Kahn: I'm going to hate you the rest of your life. Normally, with audiences like this, you can really squeeze them. You can say, "Come on, you must know who 80 to 90% of the American people know."

This is not necessarily a good thing. Eric Hoffer commented upon it by saying, "There's something sick about a country in which only a southern racist cracker can deal with the issues." Now that's a fair statement. That's an indication of social malaise, among other things.

Now, we have a list of about 12 issues of American life that are formally characteristic. About 80% of Americans understand these issues quite well. They don't learn these from newspapers. If you read the **New York Times**, **Washington Post**, **Time Magazine**, **Newsweek**, **Harper's**, **Atlantic Monthly**, and to the extent that they discussed these issues at all (except when they had a guest editorial once in a while, or an outsider or a temporary post-election attitude) they never explored these 12 issues. First, there's law and order. From '61 to '65 all these magazines claimed that this was a code word for anti-Negro. Remember that? We couldn't find a single demagogue who used it that way. Wallace would give you his position on the Blacks, and then would talk about law and order. He couldn't use it as a code word, because he'd already given you his position. Half the Blacks in the cities put law and order as the top issue

in their lives. They couldn't use code words either. In other words, people understood what they were talking about. There was a big increase in crime, a good deal of it was young Black crime – it's been actually overstated how much of it was that, but a lot of it was. The liberal couldn't cope with it.

Or take busing. We've bused in this country since roughly 1908, I think. Mostly to better schools. In the South they bused to maintain segregation. What do you think a real estate agent told you, the first thing he could, when you were trying to buy a house? Neighborhood schools. If you check you'll find that the average American was willing to pay 5, 10, 15% more for a house if he thought it had good neighborhood schools in the area. He was always willing to bus his kids to better schools, but he was willing to pay a big hunk of his wealth for neighborhood schools.

You have a democracy in this country. You have a long tradition of public control of education. Right? We're about to change this, I suspect. Now, in the South, they committed a legal crime – *de jure* segregation, and you could punish them. In the North there's no such legal crime committed. What do you think of a policy of trying to bus children long distances to bad schools in this kind of context? Do you think such a policy could succeed? Long distances to bad schools? I'm not talking about busing Blacks into the good schools, I'm talking about busing children to schools they judge to be bad. Let me tell you, you've got to be a fool to try it. You can destroy neighborhoods by the way, if you want, but you've got to be crazy. You can't play with children that way. Now, you may say that the people who oppose the busing are generally bigoted people, and that's correct. And so are people who don't oppose the busing. Bigotry is a class characteristic in the United States. You know Archie Bunker in "All In the Family"? He is a very good picture of the average American. And, by the way, the average American is pleased with that picture. I've talked to Norman Lear. He says they kill themselves to have Archie come out backwards, and they can't do it.

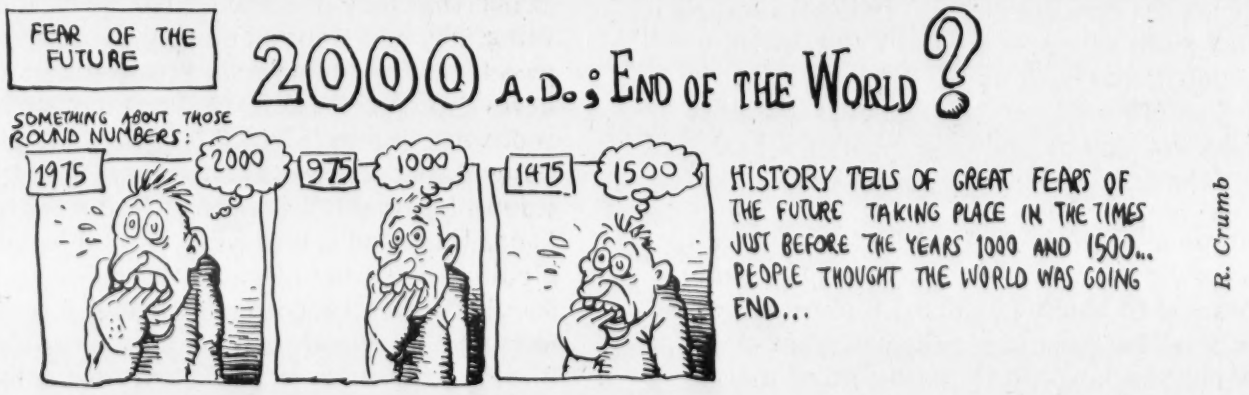
English libel law applies here. If you say something about an individual, and it's nasty, and there's no reason to say it, and it's false, you pay damages. If it's true, you pay triple damages, because the truth is so much more damaging. That's the way the average American feels about it. He knows he's a bigot, and it's none of your business. They're not very bigoted, the American public. Say you ask the average American, "Which would you rather cut, NASA's Space Budget or the Relief Budget." Which do you think he would postpone? He thinks of Relief as a boondoggle for Blacks. He thinks of NASA as a boondoggle for scientists. He likes scientists and he's sort of hostile to Blacks. But Blacks are at least people. Really, his hostilities are very low-level.

I want to address a very important issue. Why is it that the New Class seems to get everything wrong today? Here I differ from my colleague, Barry Bruce-Briggs. I believe the single major problem of the New Class in educated incapacity – they just don't know what they're doing. He thinks that it's self-interest. And he talks about Brevor's concept of interest affinities – people make the mistakes which favor them. It's just sort of natural. Let's look at the self-interest issue. One thing is terribly clear in the United States today, and in all Western cultures: the New Class is spending more and enjoying it less. In fact they are going down as their numbers increase.

The basic point seems to be the following. If you had 10 million cars, as you had in 1950, and you owned one, it was great. Now you have 110 million cars, and you've got traffic jams. One of the most interesting characteristics of the New Class is an absolutely manic hostility toward automobiles. It has to be seen to be believed. We told the automobile companies that they would have a lot of trouble selling small cars in America. The most typical activity of the average American is picnicking, camping, visiting relatives. He's got three children, a dog, and a bike. You just don't put that into a Volkswagen. You give him a Volkswagen, you just cut out the heart of his lifestyle. He's not going to stand for it. Why should he? He also believes the big cars are safer. The data's now with him: he's right.

The New Class has an agenda. What is their agenda? Number one is risk aversion. In the New Class theology the only real value is human life. You're never entitled to risk human life. It gets to be kind of manic. The risk aversion is pushed to the point where you're running bigger risks.

Take, for example, the issue of chemicals in insecticides. Today we know pretty much how to do biological insecticides – we don't really know, but we're at the verge. In order to really understand this, you've got to commercialize it and try it out. Now, it turns out that the government authorities are insisting on the same kinds of tests with the biological insecticides as exist for the chemical pesticides. These are very expensive, and for a number of reasons, incapacitating. The manufacturers are dropping out



Kahn: We make the future, that's true. But we do not choose it. The thing has its own momentum. You are not God.

of business rather than try to go through these tests. The manufacturers took the position: these are all natural substances, we've had experiences with them, how much damage can they do? They want to go back to the old rule that the government has to prove its case. (Incidentally, it's apparently impossible to prove safety. There's no experiment you can do which will viably prove safety. All you can prove is damage.) The whole business of medical malpractice is a similar matter.

The next single biggest characteristic of the New Class is localism. Let me ask you this: How many of you believe in unrestricted development for your personal neighborhood? Would you raise your hand please ? Nobody does. Now, I want an honest answer. How many define "unrestricted development" as any development which is not in your favor? On the East and the West Coast: almost everybody. Not in the Midwest, not in southern United States, not in the Southwest. They don't understand the question. They have a perfectly clear concept that you can't cut the ladder after you.

I can give you a list of about 20 items on the agenda of the New Class. Every one of them is very hostile to the middle class, especially to the upper middle class. Every single one of them. So we define politics in the United States in an over-simplified fashion: a war of the New Class versus the middle class. New Class versus working class. When you look at politics that way, everything falls into place.

I myself am obviously New Class. The New Class is about 50% of what we call neo-liberal. You remember the old liberals — laissez-faire, let us alone, let us make do by ourselves? Then you had the concept of government intervention to make the market work better. Then you had the concept of government intervention to make the income distribution, income maintenance better. Now you've got government intervention by what we call the health and safety fascist. He doesn't give a damn about your morals — you can screw in public on a stage, he couldn't care less — but you can't smoke. And then he calls everybody else a materialist.

I happen to like the middle class American. I think very well of him. And as I get older I identify more and more with him, with his virtues and so on. I don't want to romanticize him. Actually, on many issues my wife and I are incredibly middle class. I'll give you an example of what I mean by this. My daughter came home at 14, and at that time she couldn't date. She was allowed to go out with boys, but she couldn't define it as a heterosexual relationship. She brought home this boy and was holding hands in the living room. And when the boy left, my wife and I turned to her and we said, "What's this nonsense of holding hands in the living room?" She was shocked. She said, "Do you want me to do it behind your back?" And I said, "Absolutely." She said, "Isn't that hypocrisy?" I said, "Yes. Hypocrisy is the tribute vice pays to virtue. If you don't know enough to do that at 14, you haven't been socialized." And she got terribly puzzled. I said, "Debbie, do me a very big favor. In the next four or five years you can do all kinds of things. But if I catch you at it, you're in very serious trouble. If you don't do it, I'll send you to a psychiatrist. Now is there any problem about the kind of behavior that's expected?" I went around and made some speeches in the local high school on hypocrisy. The kids had it right, they understood it, the teachers didn't. The kids were clear on every nuance.

LOVING TUNDRA

Let me move on here. I want to give you a picture of what a sensible country does in energy. You know the tundra we have in Alaska, the 100,000 square miles of tundra? One cannot do any work in the summer: if you make any mark in that tundra whatsoever, it'll last 10 thousand years. It doesn't repair. Now, we have enough tundra in the United States to supply all future and current tundra lovers. But I never met a tundra lover. People say, "How do you know they won't be produced later?" I would answer I don't know. I have no idea what social process produces a tundra lover.

Have you ever seen tundra? It's bleak. There's nothing you can do without improving it. I had a discussion with President Ford about two years ago. I said, "Look, why don't you declare the north slope of the Brooks Range a national park, and challenge American industry to do the worst they can. They can't hurt it, because you'll always have tundra left over, all you want, huge expanses of it, and you'll really simplify the problems of getting oil." I just came down from Canada this morning. I had an opportunity to talk to some of the government people, and it turned out they have a tundra problem even worse. They have 200,000 square miles, nobody likes tundra, but they aren't allowed to damage it. It's crazy. Practically insane. How did such a policy get established? Why? They want to avoid before-and-after pictures.

The basic concept ought to be something like the following. You try to preserve, for your grandchildren and for yourselves, everything that you really want, understanding that it's very expensive to preserve things. There's nothing more expensive than a wilderness that's untouched. Do you know what the delay in the Alaska pipeline cost the American public? The first year of delay was reasonable; it was a badly designed pipeline, and it had to be redesigned. And I don't know who gets credit for the first delay. The Sierra Club claims credit. Governor Hickel claims credit. I'll give it to both. After it was redesigned it should have gone ahead. The delay was five years. Do you know what that cost this country? Fifty billion dollars in balance of payments. We do not

Kahn: I want to take the position that land which has no value until you try to destroy it, really has no value.

yet know the total cost. That's a lot to pay for a looked-at landscape. It's just a lot of money. My concern was less with the money than it was with the foreign policy aspect, which I happen to think as being even more tragic, though we don't know.

Our basic concept on ecology issues divides the country into three areas. One side of areas you just don't want to touch, another set you can fix, and the third set is a national dump. You do the worst you can. Incidentally strip mines look great. They look like they're designed in hell for devils. They fit exactly into the modern protest painting. They're avant garde art. You can't beat them.

All right, let's assume you have this kind of attitude. The first thing that you have to know is a technical issue. If you look at the calculations for the liquefication of coal to oil, you have a 15 - 20% discount in cash flow basis, and we assume a rise in construction cost increase of 10% a year. Both are unreasonable and result in about $20 - $30/barrel, which is not competitive. To get a needed additional 5 million barrels a year will cost 100 million dollars. It's a lot to spend for something that's not competitive. Natural gas probably runs into the same kind of calculations, $2 - $4,000 a hundred feet. Again it costs about $100 million to establish an industry.

We say the following: assume proper government ownership, and account for inflation properly. Say that you had indexed bonds which now go up by 2 or 3% and you changed the value of the bond, that would effectively change the value of the plant. Charge yourself 4%. It turns out this is counter-intensive — the price goes down to $8 to $12 a barrel, which is very competitive. The United States has 2 trillion tons of coal, of which about a third is available. That means we can liquify oil for the next 3 or 4 decades. Now remember, the eternal sources come in in the middle '80's, late '80's.

Wilson Clark *[Author of* **Energy for Survival***; Gov. Brown's Assistant for Issues and Planning]*: Where does your water come from? Do you invent the water or what?

Kahn: I'll run the Mississippi backwards. You've got to pay for the water. If you try and exploit 100% of the area, then you've got that problem. You get a lot of local water, you bring a lot of water in.

Clark: From where?

Kahn: There's so much coal in so many places in the country, that I don't have to run the water in. But other places like Montana I can bring the water in. I repeat, run the Mississippi backwards. You take plastic pipe and run it in the river where you have the same pressure inside and outside — it's relatively inexpensive. Pumping power turns out to be relatively cheap. The Mississippi collects a lot of tributaries . . . Of course I'm not saying we're not going to do that, but if you really want to get a lot of water . . .

Clark: But what are the environmental costs of that? How can you seriously . . .?

Kahn: Very high. Environmental costs are very high in that local area, which is like 5% of the state of Montana. And this is the point I'm trying to make. I'm perfectly willing to wreck 5% of the state of Montana.

Voice: Did you talk to the people in Montana?

Kahn: Yes. Montanans are not against the wrecking of the state. Their first concern is water, and they don't trust the mining people. If you go back to the turn of the century, 1900, there's enormous hostility in the United States to the railroads and to the mines — big money companies — and that hostility has remained in most of rural America. They don't trust them — for the best of reasons: they weren't trustworthy. If you go to Montana, they do not mind you wrecking 5% of the state. They do not want a boom-bust; they want you to pay full taxes; and they don't want their water stolen. If you can satisfy those three issues, there's no problem. Second point: If the Montanans give you any problem, it's Federal land (half of it), tell them to go to hell. The U.S. government can go ahead without their permission.

I want to go back to my basic position, that you are perfectly willing to wreck large areas of the United States if the area is low-quality, not Echo Canyon or the Grand Canyon or things like that. The basic principle we have now on this is wrong. They say if there's less than 10 inches of rain a year you can't do strip mining, because you can't restore it. Ten to twenty inches you can do a kind of partial restoration, so 10 - 20's allowed. You really should reverse it. I'd say a fair proportion of the less-than-10-inches-of-rain country is low-quality desert. What do I mean by low-quality desert? There's no particular group in the United States that has a passion for it, unless you want to destroy it, and then they develop a passion for it. The passion's there only after the plans are made to develop it. It otherwise has no value. I want to take the position that that kind of land which has no value until you try to destroy it (like the tundra?) really has no value. That's my basic position. I could be wrong but not obviously wrong. It's a respectable position. It would be recognized by any culture in the world except by New Class culture in the United States as a respectable position. What nobody values may not be valuable.

Voice: You're making an assumption about the motives of the people who try to protect those places. They're willing to give up a lot to protect it, therefore it is valuable.

Kahn: There's no question it's valuable to them, but it's not valuable to me, and since I give them bad

motives, I don't have to respect their values. And I don't. But you have it right. It's valuable to them.

Let me tell you a story which is told in every country in the Mediterranean area. The Mediterranean area as you may know is a revenge culture area, all the way from Portugal right through to Turkey. I'll place the story on Cyprus. The angel Gabriel comes down to a Greek peasant and says, "God has recognized you are a good man, and He wants to reward you on Earth, and He will take away nothing of your reward in heaven. He's just decided to be good to you. But He has to be fair. Whatever you ask for, He will give twice as much to your Turkish neighbor." Without a moment's hesitation the Greek says, "Put out one eye."

All right. He values revenge. But I don't have to go along with it. I mean, values are culturally determined, you all know that. And some values are perverse as judged by another culture. Tundra lovers of the world, you ain't got a chance with me.

Voice: Tundra doesn't seem very important to me, either, but maybe some part of Montana does. If the New Class generation of obstructionists is saying, "Save Montana," maybe they're also saying that they feel that down the line a technical breakthrough such as Nitinol is going to come and make digging up Montana unnecessary and would come sooner if there was more pressure put on the scientific community. Do you take account of that?

Kahn: Yeah. We're not looking for trouble, and the New Class is terribly important so you've got to make concessions to them. But they're important because of their strategic position. They have no moral authority. From the moral point of view they look like swine. They are a political reality, and you've got to deal with them. But one talks about tactics, not morality. To answer your statement, I would simply argue, if you can avoid problems by simply waiting a little bit, fine. But we don't have that kind of time. You're talking about 10, 15, 20 years.

Voice: Maybe you're talking about 2 years.

Kahn: No. Energy issues are terribly capital intensive. To change a system takes 10 or 15 years.

Let me jump to the controversial part of the program. It turns out that Alaska has 2 trillion tons of coal. This is new; this we only found out last year. It's not accounted for in the handbooks. When we tried to get the information on it we had to call up Alaska; not even Washington had the information. We know nothing about this coal, except that this is the current number the Geological Survey gives us, 2 trillion plus.

Stewart Brand: Is that available coal?

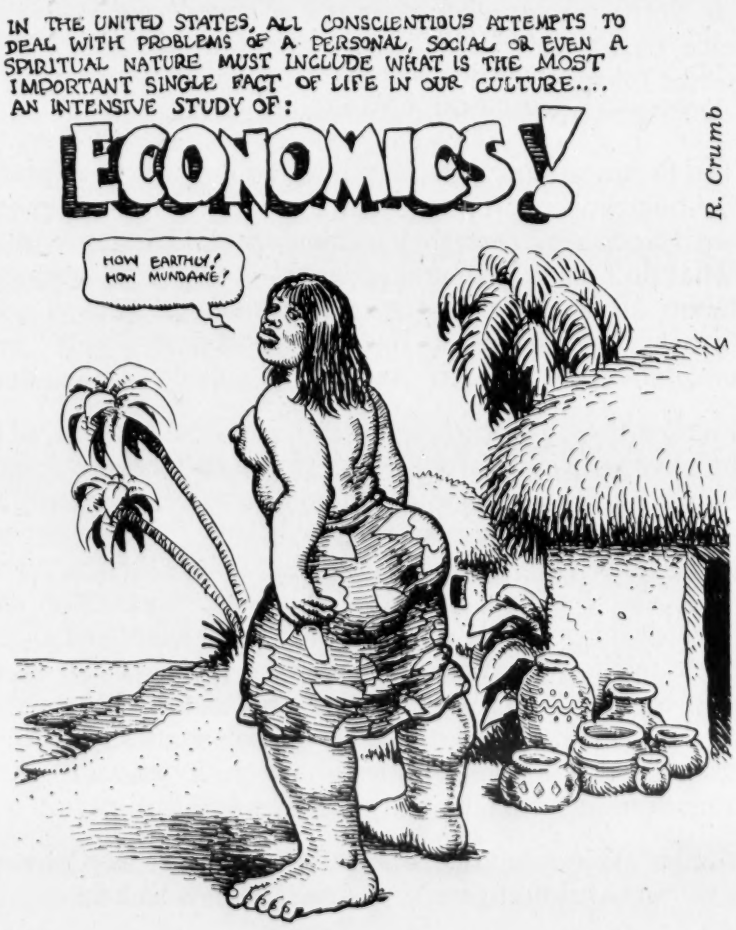
Kahn: We don't know. You can always guarantee that like a quarter will be available coal. We are told that it's just in very big seams. And if we use very large machinery, it's very available — I mean really tear the place up. It turns out that when you tear the place up, you generally are talking about areas of like 50 miles by 50 miles, 2500 square miles, this kind of thing. Now Alaska has 550,000 square miles. I want to do one of two strategies. Strategy one is give it back to the Russians and tell them to develop it. They'll do it. They have no problems. Or, take the 550,000 square miles you have in Alaska, tell the New Class they can have 300,000 square miles and make them pay. Two hundred and fifty thousand square miles belongs to the steam shovel. About 10% of it will in fact be dug up. And there's no hope of repairing it. It'll be a great monument to mankind.

Woman's voice: How many generations get to trash 5% of their land?

Kahn: You don't run out of land. Let me give you some figures on that. I live in a place called Westchester County. If you like suburban sprawl, it's generally thought of as one of the best places in the world to live. It's 2,000 people per square mile. You take the current standard metropolitan areas in the United States (just of the 48 states, forget about Hawaii and Alaska), 10% of the United States is metropolitan area. That's 300,000 square miles. If you develop them to the level of Westchester County, that'll be 600 million people. It's generally felt that the stable population of the United States will be 300 or 400 million. The current figures are 260 million as a matter of fact. So you can have everybody in the United States in suburban sprawl, Westchester County style, and have 90% of the country left over. To do whatever you want.

Voice: Where do you get your food?

Kahn: Food again goes the other way. You look at New England, where I live today, you have more forest area by a factor of 10 than you had 100 years ago, 200 years ago. If you drive around New England today, what do you see? Second growth forest everywhere. Know what places those are? Abandoned



Kahn: What I don't like about the New Class is the way they push the squares around.

farms. Every year in the United States except for the last couple of years the amount of farm land goes down every year, not up. Because you have very intensive farming. It doesn't pay, in other words, to use lower quality land. Now if you want to make farm land, you can make it. It's expensive. But by the way it's a lot cheaper than suburbia. You know this business where people say suburbia is eating into our farmland? That's again a completely New Class concept. Now some states are doing it right. They go to the farmers and say, we want to preserve the character of the land. We'll buy the farm from you, and rent it back to you. Or we'll pay you a certain amount, and you must agree never to sell it to suburbia. That's a legitimate, respectable way to handle that problem. You want to preserve the country neighborhood, you don't own that land, pay for it. That's honest. They don't do it that way. They say, we're running out of farm land and we must save it, because you've got to feed the poor. And it's just nonsense, total nonsense.

You know the business, you shouldn't eat meat in order to have more grain for the Indians? You remember that nonsense? Can anybody here give me a single scenario how that gives an ounce more grain for the Indians? Grain is grown for the market. If you don't eat it, they won't grow it. The price goes down hardly at all. The World Council of Churches finally got embarrassed by this business. (The World Council of Churches is a typical New Class organization; The Sierra Club is the other one.) They said, what you should do is eat less meat and send the money you've saved to India so they can buy the grain, and by eating less meat you show moral solidarity. You know what's the hardest way to raise money in the United States? Telling people to eat less meat. They won't do it. They'll send money, but they won't take it out of their meat ration.

I used to live in Los Angeles. A friend of mine lived in the San Fernando Valley, and he was the chairman for the Highway to the Sea Committee which goes through Topanga Canyon. He later moved to Topanga Canyon and became second in charge of the Save Our Home committee. I asked him, "How can you do it?" He said, "I never understood the argument." And this is what's going on here. People don't understand the argument.

Woman's voice: I was interested in what you meant by the morality of the New Class.

Kahn: Part of it is traditional. Throughout all of American history the upper middle class has tried to force its values on the country. I would argue up to about 20 years ago that was a good thing. They were the squares, they were the ones against vice, against thievery, for raising children clean, you know. They wouldn't stand for bringing the language of the streets into the schools. Today the upper-middle class has reversed its values completely.

You know something? If you saw a hippy anywhere in the world before say '72, you know what he was? He was Scandinavian, Dutch, English, U.S., or Canadian. Once in a while Protestant sector of Germany. There were almost no Catholic hippies raised in Catholic countries. It's completely a phenomenon of Japan and the Atlantic Protestant culture (not Swiss culture, which is also Protestant; it has none of this phenomenon).

Take a look at Holland. You know how people blame much of this phenomenon in the United States on the race problems, on poverty, on the Vietnamese war and so on? Holland has no race problems, no poverty, no pollution except water from the outside, no Vietnam. They have a drug culture which is much worse than ours; their provos are much more violent and even get elected to the city council; they have an alienation that has to be seen to be believed. This has nothing to do with Vietnam, or poverty, or race, or ugliness. It has to do with a problem possessed by every member of the Protestant culture except Switzerland.

The Protestant culture I'm talking about here (except for England) used to have a kind of manic love affair with God. And then they became manic atheists. What do I mean by manic atheists? Any totem, any taboo, anything that's irrational or arational in our lives, they're hostile to. In other words they don't understand the need for this kind of a thing.

I have a theory of culture which is not documented, but I've noticed the following: if you go to the South Pacific islands where there was no pressure by the physical environment on the society, the psychological environment was made unbelievably hostile. They have the most complicated taboos, most complicated dangers you've ever seen in your life. And life is terrifying. There are magicians, and they can raise boils on you. Why? I have a belief that if the physical environment doesn't give you structure, then the psychological environment must replace it — that you have to have structure.

Let me ask the following question: there are two basic views of humanity, the Pelagian view and the

Augustinian. The Pelagian view can be summarized, there are no bad children, only bad parents. If you fix the environment, the kid grows up naturally well. The New Class is Pelagian. The Augustinian view is the child is basically evil. How many of you are Augustinian? Have you ever noticed a baby? They're not known for tolerance, moderation. Babies will destroy the universe if they're empowered. Probably the most intelligent, well-thought-through Augustinian we know of is Freud. Now Freud said three things in Vienna: 1. Civilization is repression; 2. You must socialize that child at any cost; 3. Having accepted the first two theses, how do you reduce the cost? Now, that's all that America heard, was point number three.

Let me close this with just one other example. I have a friend of mine, his name is Gordon Dewey. He's a grandson of John Dewey, and I mentioned to him about 4 or 5 years ago that his grandfather really caused 80% of the problem. He said he's tired of hearing that (he believes it too, by the way). But he made a point which I'd never really understood before. He said, "Look, my grandfather was raised in New England. Their character tends to freeze like the stones, the rocks. And the problem is, how do you loosen them up a little bit? How do you get a little joy, a little creativity, a little spontaneity, a little flexibility? How was he to know the rest of the country was slobs?" With that cheerful thought, let me terminate. Let's have some questions and comments.

Voice: What's your plan for the Asian people who have very low caloric intake? What do you see as a solution to their food problem?

Kahn: You've heard the phrase, "Half the world goes to bed hungry at night"? You know where that phrase came from? From **Steak and Arithmetic** by Lloyd Belacourt of the FAO – Food and Agriculture Organization. When he was challenged he refused to admit it was wrong – it's come out since. A lot of economists finally characterized the FAO at that time as an organization permanently dedicated to famine. If you look at the figures of the Meadows book – **Limits to Growth** – it will tell you that the Japanese are hungry. Because what they say is that the average person needs 2500 calories a day, which is a British average. We use about 5300 in the United States. The Japanese eat between 2150 and 2200. You can't find a single hungry Japanese. They don't exist. Unless they're dieting.

Now, the Indians eat about 1800 calories a day, and that looks pretty low, and it is low. But they've studied rich families in Ceylon, and they eat 1800 calories a day, and they're not dieting. It turns out that if you live in the tropics, are of small height, and don't work very hard, 1800 calories a day, or 1900, is what you want to eat. You're not hungry at all. Now, that's not true of the Indians. Because many people work very hard in India, more than 1900 calories per day are needed to keep them well. I'm not saying there's no hunger in India. I am saying the normal treatment of this is sheer nonsense.

Second comment: In 1965, under pressure from President Johnson, Indians put serious attention to agriculture for the first time. By 1969 they were independent in food – that year they didn't import any grain. I believe if they had continued those policies, on the average they would have stayed independent – some years are good years, some years are bad years. They reversed the policy and focused attention on industrialization again, cut the agriculture budget, and they ran into very serious problems, as you know. They've now reversed the policy back, and now they're piling up huge food stockpiles, probably because of luck, which costs them more than they can afford. They're not doing this because they're being sensible, in my judgement. I may be wrong here. They're doing this because they're embarrassed. It's done for public relations policies. Now, I want to be a little careful here. It makes a lot of sense for the Indians to pile up food. But previously whenever food became surplus, the government just let the price drop. Now the basic problem is roughly the following. In almost every one of the poor third world countries I know about, the agriculture policy is determined by supplying cheap food for the cities. Even if it wrecks the farmer. This is PL480 money. We have wrecked farming, by the way, with shipments of food. I'm not saying the shipments were wrong, but they could have been financed a little better. The price should have been higher. You've got to give the farmers sufficient emolument.

I'll make another point. As you increase your knowledge and you increase your surplus, you couldn't care less how perfect your agriculture is. If you're living on 1800 calories a day and you're living on grain, if you have any kind of problem, you've had it. If you're like the United States, where you're using what, a ton and a half of grain per person, you could lose half your crop and nothing happens. The main reason why I think the world is basically safe is it's going to eating meat, and meat gives you a factor of 10 of insurance. You can always give the meat up and go back to eating grain. You lose half your crop, fine. You give up grain. You don't get that surplus unless you go to meat eating.

The main reason for wealth, by the way, has nothing to do with the high standard of living. It's for safety. People are always telling me that the rich are not as much affected by the oil crisis as the poor. That's absolutely correct. That's one of the main uses of being rich – nothing affects you. The rich have technological capability and they have surplus. That's a hell of a lot better than drifting on the edge where one bad year and you've had it. You're not going to create surplus with primitive agriculture. You just won't.

Amory Lovins *[Friends of the Earth]*: Where are you going to get the oil, the gas, and the coal eventually?

Kahn: The fossil fuels run into the 22nd century before we run out.

Lovins: That's just coal.

Kahn: No, I'm sorry.

Lovins: What else?

Kahn: You have all the oil you want right to the end of the century at a higher price – you'll use much less

Kahn: I think '65 to '75 was a very special period in United States history, and any attempt to extrapolate that period into the future is going to be misleading.

as a result. In the United States today, I can tell you where there's 150 billion barrels of oil. We've still only taken out a third of the oil from the ground. Raise the price to $30 and you'll recover 80% of it. It's a price issue. You'll never run out. My guess is something like 2/3 of the oil in the world will never ever be taken out of the ground because it isn't worth the trouble.

Voice: Well, isn't the price related to the energy that's required to get that oil out of the ground? Everything I hear is dollars, dollars, dollars. Aren't those dollars finally tied to resource? Or do you invent the dollars?

Kahn: No, no, no. One of the things I really don't understand today is the current popularity of including the energy cost of things. If you're an engineer, the energy cost tells you where the efficiencies are in your design. Take the following example. Every electric power plant we have throws away 2/3 of the BTUs to go from coal to electricity, right? Now, is that an argument against electricity, does anybody think it is? The point is that electricity is a higher form of energy, and you're perfectly willing to throw away 2 out of 3 BTUs to get it.

Lovins: Only if you can use it to advantage.

Kahn: Yes. And that's shown by the price of energy, the demand. People are willing to pay more for it because it's more usable.

Lovins: Which is why the 5 cents/kilowatt hour you're talking about corresponds to $80 a barrel. That's pretty expensive energy.

Kahn: No, it isn't expensive energy. If I use it to heat a house in a dumb way, it will be $80 a barrel. But I'm not going to use it to heat a house, I'm going to use a heat pump, in which case it competes, and it's cleaner. It depends on the outside temperatures.

Lovins: You aren't going to get a Coefficient of Performance of 8.

Sim van der Ryn *[State Architect, head of Farralones Institute]*: I can see why you had problems explaining this to engineers. Thermodynamics and biology do not enter into any of this thinking.

Kahn: That's not true. My background is physics.

Voice: But there is a level of scarcity of the resource where you have to pump in more energy than you get out.

Kahn: Obviously you have something called conservation of energy. And you want to do an accounting of energy because it's conserved — you can't create it or destroy it. That's a calculation which is terribly interesting if you want to know the efficiency of the system, or improve it. That makes sense. Nothing wrong with that at all.

But I'm asking a different question. How much does it cost society to go through this project? How do I feel about it as a citizen? Do I want to keep a double set of books, or not? Now, the answer is a little complicated, because right now in the United States we're selling energy below its market clearing price. That means that any citizen who saves energy, even though he spends a little bit of money, is doing a socially useful thing. But if you ever gave it an appropriate price, with all the external effects, then I'll argue you have a very simple set of theorems in mathematics, a Leontief model, which will prove my case. If I have a complicated set of things and I want to optimize some quantity over here at the end of the system, or some running function, the way I do it is by means of something called Lagrangian multipliers. And I can set them in such a way that if I maximize the effect of net profit per thing, I maximize the system. Now it turns out that, to a reasonable approximation, a free market supplies the Lagrangian multipliers for you. This has been studied very heavily in socialist economies. They don't have a free market. And the two numbers come out the same! If you have a simple free market of an Adam Smith quality, or a big computer that calculates Lagrangian multipliers, that calculates the true cost, they come out exactly the same.

Lovins: So what?

Kahn: So you don't have to do any energy accounting. You just do price accounting.

Lovins: Only in a perfect market, but perfect markets don't exist.

Kahn: I agree with you, we're not arguing a perfect market.

Lovins: There are central problems. For example, you can bank money at interest, but you can't bank energy at interest. In fact the Second Law of Thermodynamics says the interest rate's negative. All you're saying, which is correct, is that under ideal circumstances, which have never existed and will never exist, energy analysis isn't necessary.

Kahn: Let me just ask you the following. How close to ideal is the market price? How badly off are we?

Lovins: How do you ever assign a value to a fuel in the ground?

Kahn: I look at its rental value. I've got to discount for the future, and that number is exactly right. I'm not saying the system always discounts properly. I don't think it does for the long run. I happen to believe that the Arabs did us a favor by raising the

price of oil because they focused enormous attention on this problem. In fact we weren't looking at these long-term energy problems that well and the market was not a good guide for the 20 year or 30 year period in this particular case. But I would argue that today there's no such problem. I'm agreeing with you that at the moment energy's not correctly priced in the United States. Therefore the price is not a good guide. And you should be conservative, as a good citizen. But we can raise the price of energy, until it is a good guide.

Voice: You're saying, if I understand you, that we can develop surpluses by intensive agricultural development, and the whole foundation of this structure that you have is the availability of what we perceive to be exhaustible resources.

Kahn: Look. Take the Meadows book, which was for a while the bible of this movement, right? It starts out with aluminum. It says we're running out of aluminum, it's number one on the list. Aluminum is 7% of the earth's crust. We now have 10 processes using different ores than bauxite. You don't hear arguments about the recovery of aluminum anymore.

Lovins: Nobody seriously believes we're running out of aluminum.

Kahn: I'm sorry, Meadows' book started that way, and none of these guys criticized it at the time it came out. A lot of people believed it. Iron is the one that's the next on the list. That's 6% of the earth's crust, and so on. Let me leave out tin and mercury and silver and I can identify for you right now where to get every raw material to last well into the 22nd century.

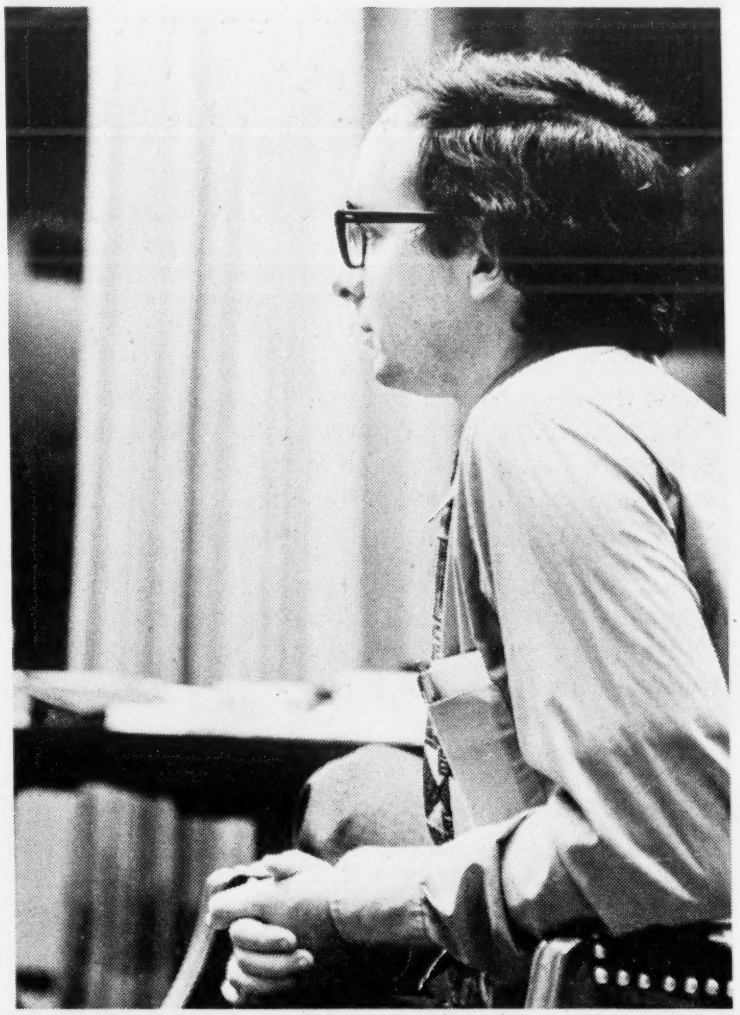
Jerry Brown: You say that the New Class is growing in Protestant Western society, which a hundred years ago, someone wrote, was the reason why we had an industrial revolution.

Kahn: I believe that's right.

Brown: OK. So first you get the Industrial Revolution, then we create all this wealth. That generates this byproduct called the New Class. The New Class is growing in strength. It seems to me that the curve you're plotting shows that the country politically or technologically collapses in 10 or 15 years, and some other more retarded country takes over because they don't have the burden of this New Class that is produced by all the technological progress.

Kahn: That may happen. I would say: even money it happens. But it's not the only scenario. It has happened in England, remember. England was the one that started all of this. England has always had very much a New Class atmosphere in the upper classes. And England's in serious trouble. If we were in the old system, with wars and things like that, England I'm sure would be taken out.

It's hard to imagine that in the United States, we are just so rich. You can mismanage this country for decades and not get into serious trouble, and that's the problem, by the way. Because if you could see the effects of your mismanagement, you wouldn't



Amory Lovins

do it. Municipalities can see it. Every municipality I know of has changed its attitudes because of New York. But there's no such phenomenon in the Federal Government.

We've made a distinction between what we call the Athenian, French, Chinese type culture, where you're going to be able to have a great deal of wealth and safety without any collapse, and what we call the Spartan, Roman, U.S. type culture, where wealth and safety seem to bring a kind of collapse.

Brown: Yeah, but Athens collapsed.

Kahn: Athens was beaten, but it was very hard to beat Athens. The only people around who could beat the Athenians were the Spartans and Romans. Nobody else. If there were no Spartans or Romans around it was safe to be an Athenian. That's one of the points, by the way. If there are Spartans and Romans around, it's not safe to be Athenian.

Brown: The Athenians beat themselves. They kept fighting with their neighbors.

Kahn: Until they tangled with Sparta they won most of their wars. Now that's a clue. On the way up these Spartan and Roman, U.S., English cultures are really ferocious. But when they get there they have a tendency to collapse. Don't tangle with them on the way up, wait 'til they get there. Now, the Romans didn't actually do that, so it's kind of interesting. The Romans adopted about 10 things in order to prevent themselves from collapsing. (The Spartans did collapse, needless to say.) First of all the Romans

Brown: It seems to me that the curve you're plotting shows that this country politically or technologically collapses in 10 or 15 years, and some other country takes over because they don't have the burden of this New Class that was produced by all this technological progress.

Athenized. You remember the Virgil poem, "We conquered thee and in turn were conquered by thee"? They selected from Athens those elements of the Athenian culture which enabled them to live with safety and wealth. Augustus, for example, had a conscious concept of creating morality. Remember, "He found Rome great and left it moral"? They were religiously square. It used to shock the Greeks, when they visited Rome, to find that it was a religious culture.

The United States is a religious culture. If you look at the square religions – Baptist, Church of Christ, Pentecostal, Orthodox Catholic, Orthodox Jewish, Mormon – they're all on the increase in the United States, did you know that? The only one that's been noticed by the newspapers is the Jesus Freaks. Why are they noticed? Because they're the children of the newspaper reporters. One of the reasons why I think the United States is basically in good shape is this increase in orthodox square religions. There's been an enormous decrease in the transcendental religions, the New Class religions.

Voice: How long has this religion increase been going on?

Kahn: About a decade.

Voice: Well, how do you tie that into Vietnam?

Kahn: You think of Vietnam as being immoral?

Voice: Well, isn't true religion not dropping bombs on little brown people?

Kahn: That's your picture of the war, it wasn't theirs. Look, if there have been any people who've been able to kill with a great deal of ease, it's any religious movement at a high point in its career. They kill in wholesale amounts. They've never had any problem rationalizing it. You may have a picture of religious peace, but I don't have that picture at all. We think of messianic movements as the most dangerous things in the world, barring nothing.

Lovins: You said you can get rid of inflation by indexing everything so you only pay a real interest of 4% a year. How much money will you loan me at 4% a year?

Kahn: Real, all you want. Real.

Voice: But we're living in an inflationary economy.

Kahn: What I'm saying is I index the principal of the bonds, so that it goes up or down with inflation. And presumably the price of energy has a tendency to track. Actually we have a more complicated proposal. We're suggesting that a spectrum of bonds be available indexed on different things, one on the price of energy, one on the price of construction, and so on. And the reason for this is that you can hedge. For example, say you want to put up a construction program, which will take you 14 years of hearings. OK. You raise the money and put it in bonds indexed to construction costs. Then whenever you get through the hearings you have the money for construction. And if you do this properly, you're going to find people paying at a premium for the index.

In England today, if you are retired or a worker, you can put money into a government account (you have to put it in for 3 years), and at the end of 3 years the government gives you your money back. Not a cent more, not a cent less. But it gives it back in real terms. And since that is 15% interest, it's the most popular account in England. People are willing to pay enormous premium to protect themselves from inflation.

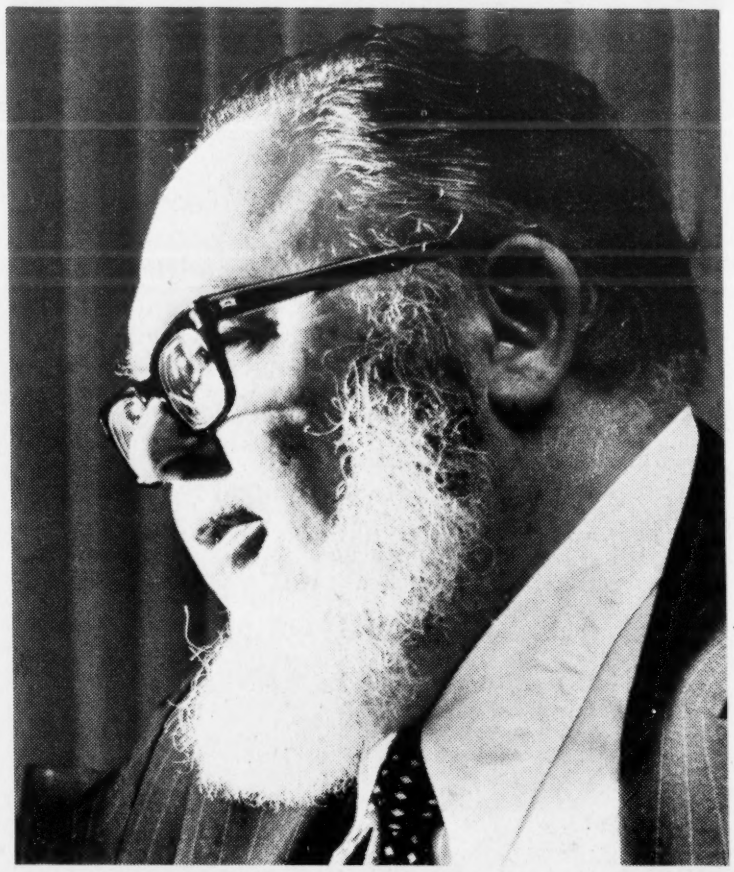
Voice: Your thesis is that we have inexhaustible resources because we can always spend more to get more?

Kahn: That's so vulgarized that you ought to be ashamed of yourself. But go on.

2nd voice: He must have hit a good point.

Voice: It seems to me you've not dealt with where the capital comes from for the very large capital intensive projects which would be required to get these resources. You've not dealt with the environmental or social externalities. You've not dealt with

Kahn: I would say: even money it happens. It has happened that way in England.



the difference in distributional effects between countries, and within countries between social classes. Those are all important things.

Kahn: I know, but how long of a lecture do you want to hear? We give a one-week seminar on these issues, and we don't deal with those issues well. You can deal with it in about a year's seminar. Some of them we've looked at in detail, like the capital. Now, again, we have an interesting kind of a position here in the U.S. Most countries in the world – the Chinese culture areas and the countries like Japan and the Communist countries – save 25 - 40% a year. Most European industrialized countries, with the exception of England, save 20 - 30%. The U.S. and England save like 15%. If you raise the U.S. savings rate, by 1%, you've supplied all the capital we're talking about. All of it. By 1%, from 14% to 15%. Which is still substantially less than any other country around except for England. You could always do it if necessary by retaining taxes through the government. That's a bad way of doing it, I'd much rather see it done voluntarily. If you don't fix the inflation, either by stopping it or by correcting for it, you can't do any of this. That's the first thing.

Lovins: It's nice to know those conditions.

Kahn: We have a long list of conditions here, and they can be roughly summarized: if you do very dumb things it's hard to do constructive things.

Brand: Herman, you've gone three hours.

Man's voice: One last question. If you have to make a speech somewhere weeks from now, how are you going to describe this audience?

Kahn: Except for the discussions on the price system, much more reasonable than I expected. The New Class has staying power.

[During the milling around following the speech I asked Kahn if Governor Brown was New Class. He replied, "No, he's too honest." Amory Lovins and Jim Harding joined Kahn in the Governor's office while Brown was visiting briefly with a sister who was in town. Some of that conversation went as follows.]

Kahn: It is extraordinarily rare to have a comment made about a subject which is serious and deep and important, which is not motivated by ideology or self-serving. It's so rare, that a good working rule of thumb is to say, "Why did he say it?" and analyze that.

Lovins: I don't work that way.

Kahn: You may not, and I would be delighted if that's true. We don't some of the time. I can show you a lot of ideology in our stuff. But because we can see where it's ideological many times, the ideology is under control. If you can't see it you can't control it.

Lovins: I don't know how you define ideology non-tautologously in that sense.

Kahn: You've got the right guy, I've got a definition for you today.

Lovins: It's like an accent. It's always something other people have. It seems to me you have an infinite regress problem here – it's a big Godelian. How can you be conscious of your own ideology without a meta-system?

Kahn: Well, you have a meta-system. It's not rigorous. If you ask, how do you know rigorously, the answer is you know nothing rigorously. Even the foundations of mathematics are very shaky.

Lovins: Almost as bad as the foundations of economics.

Kahn: Well, not that bad. Quite bad. We're fooled here by the language. "Foundation" is defined this way: a building can't stand with a bad foundation. But a foundation in thinking has nothing to do with the ability of the system to stand. The foundation can be absolutely miserable, and the thing can work perfectly well. I would argue that at Hudson some of us, not all of us, have a rather high degree of self-consciousness of these ideological questions. And the

proof of the pudding is the ability to talk to very different ideological groups and communicate with them.

Brand: That is something that environmentalists don't commonly do – get inside the opposition's argument.

Lovins: I try to do it all the time. When I go talking to adversarial audiences, such as energy seminars at places like Oak Ridge or Brookhaven or Harwell, I try to put the argument in their terms, which rather messes up their minds because I always use their own numbers too. There's then not much they can do about it.

Kahn: If you're right. That's not a debating trick, that's a methodology. If you can make your point with the other guy's numbers, you probably have a legitimate point. By the way, I've no objection to small. I happen to think that things that are decentralized are tougher than big tough systems.

Lovins: More resilient. I'm sure that's true. And that made me wonder very much about the resilience of the kind of system that you were describing.

Kahn: A big system can be tough too. Look at a battleship. They're very hard to sink, very hard to destroy.

Lovins: That's not resiliency in quite that sense. Battleships rust.

Kahn: They're replaced. They're resilient in that sense. They're resilient in battle, which is very hard to do.

Voice: That's like saying a rhinoceros is resilient.

Kahn: The dinosaurs lasted for how many years? 40 million years or something. If we do as well I'll be very pleased. Dinosaurs were tough for their system. You don't exist if you're not tough; you disappear. Tough doesn't mean that you can handle all circumstances. It means that under roughly the conditions you expect to find, you can deal with them.

For example look at the simple hydraulic civilizations. These civilizations depended upon irrigation. They were always highly centralized, highly bureaucratized. Take a place like Venice, where the hydraulic authority which manipulated the tides and everything, was basically pre-eminent. These things lasted for centuries in areas where decentralized systems were being destroyed or collapsing. And on the record they look good, not bad.

Lovins: There aren't that many around.

Kahn: Nothing lasts forever. Just nothing. Whether it's centralized or decentralized it won't last forever.

Lovins: I'm thinking of highly decentralized cultures which outlasted them by an order of magnitude.

Kahn: Give me some examples.

Lovins: Plains Indians, Eskimos.

Kahn: The Plains Indians tribes only lasted two hundred years as a horse culture. Eskimos do very well, they have extraordinary ability to exist both against nature and also enemies. That's an example of an extraordinarily successful decentralized culture. But there aren't many of them.

The highly centralized system is often very flexible, in the things it's flexible at and very rigid in the things it's rigid at, and that's not a tautology. It's like the high-speed computer. It's fairly flexible for whatever you program, and fairly inflexible for what's left out of the programs. I mean, it adapts incredibly rapidly to whatever you've thought through, and is incredibly rigid to what you've failed to think through.

Brand: The failure of a centralized system is that it's got to follow its rational purpose. And what is not either rational or purposeful does not enter into it.

Kahn: That's sort of right. Rational is a bad word, but whatever its purposes are, rational or irrational, within its own system it makes sense. The big problem with centralized systems is two-fold. If they're not tested they institutionalize – that is, they serve themselves, not their purposes. All systems will end up, unless they're forced otherwise, to serve the self interests of the governing class, rather than the system itself.

Brown: Hello again. If anybody's getting hungry they told me we've got some food here.

[Adjourn to a vegetarian dinner in the Governor's study. Gray Davis and Elizabeth Coleman have joined the group. Kahn has nothing to eat but a cup of coffee. The tape recorder keeps listening.]

Kahn: . . . . In the very long run I would make a guess that as food is manufactured, people will adapt to it. In the United States today 2 out of 3 people prefer oleomargarine at the same price as butter because they were raised on it. It takes about a generation or two to change food habits. Now, that will never be true, I'll bet you, in France, even 300 years from now.

Lovins: I gather that in U.S. markets for all sorts of commodities now people are tending to prefer real to synthetic things and good to poor quality.

Kahn: That's not the same thing. There's a general desire for improved quality everywhere in the United States – people are richer and want to live better. Again, in the New Class, higher quality is equated with something called "natural."

Brown: Like we're eating now.

Kahn: Exactly.

Brown: Well, the hot lunch program in schools works better with MacDonald's hamburgers than it does with dietetic lunches prepared by professionals.

Kahn: MacDonald's is an incredibly well-designed place. There's an article in **Public Interest** on just how intelligently they designed the thing. Now, MacDonald's has become one of those symbols of the upper class versus the middle class – like the car versus the bike, or the Cadillac versus the Mercedes. MacDonald's understands American taste very well. But more than that they understand how to run a

Lovins: Herman, what in your future makes people happy? Why will they try to do all this?

Kahn: I don't know any other culture in the world which teaches that you get happiness by the pursuit of happiness. You get happiness as a by-product of other activities that you should be doing.

restaurant. They keep the floors absolutely spotless, you may have noticed. And everything is done very close to the people serving, so they never feel hectic, they never feel pressed. They actually throw away hamburgers which have been cold for a certain length of time, so everybody's impressed with their own quality control. They have a high morale crew and you never get that harried character of a short order cook.

Lovins: Somehow that doesn't square with accounts of some of my friends who have worked in MacDonald's.

Kahn: I assume your friends who worked in MacDonald's were New Class.

Lovins: Do you believe there'll be any slowing down of what you call square value systems?

Kahn: There's no question there's been a big change. It's illustrated by the movie "Love Story," which is the epitome of a square movie from a square book. It's a best seller in every language. There's a nude scene. You couldn't have shown a nude scene in a square movie 20 years ago. They use four-letter words freely. She dies of cancer. You couldn't die of cancer in an American movie 20 years ago. They have intercourse before marriage, and neither gets punished.

Lovins: I'm still missing the sense of real people with real motives in your picture of the middle class.

Kahn: I'm giving you a list of things which are terribly important to people. Now, none of them may be important to you, but that doesn't make them any less real or less important to the people concerned. Now, the upper-middle class family would not prepare its children to accept with equanimity and fortitude the unfairness of life, like being crippled, say. Let me give you an example of this. One of our staff guys who is square – the guy's a pilot – has a very beautiful daughter, 18. She was in an accident in Spain, and she's permanently crippled now. She was a musician: she really had a nice career in front of her. Her mother went to the hospital, and the daughter said, "Why should this happen to me? Why should this happen to me?" Which is a question, you know. And the mother answered her, "I never told you that life was fair." A very tactful remark. "You never heard that from your father, you never heard that from me, you never heard that from the preacher. It happened." And you know something, it's changed the girl's attitude. She's learning how to use her legs mechanically. Before that conversation she was thinking in terms of suicide. They teach their children that way. Things happen. Life is not fair. That's a terribly important value lesson.

[more →]

Kahn: The New Class is important because of their strategic position. They have no moral authority. From the moral point of view they look like swine.

Lovins: My Ukrainian grandmother used to say, "Life is an onion: you peel it bit by bit, and sometimes cry."

Kahn: Yeah, exactly. Now, to a remarkable degree, the upper middle class kid is raised without any clue of that. It's never mentioned to him that life is unfair.

Brand: In the other room, Governor, Herman was allowing as to how he doesn't consider you New Class.

Brown: I don't think you know. I haven't said enough yet.

Kahn: I don't know, but you have a style of calling a spade a shovel, which is very much not New Class.

Lovins: I thought they were called terrestrial improvement implements.

Kahn: That is New Class. Of all the societies that I know of, America is the least class-conscious, except the Chinese society.

Brown: But you're saying there's this New Class.

Kahn: Yeah, which is getting its self-consciousness. In order to be a class you have to be self-conscious. The New Class was not a class in the early '60's, because they didn't think of themselves as a group. Now they think of themselves as a group — the Sierra Club, the World Council of Churches, the League of Women Voters, Common Cause, all these things — they are the enlightened Americans, the people who care.

Lovins: Essentially, the people who don't agree with you.

Kahn: No, come on. Do you think I'm making up the whole phenomenon? I'm New Class myself, incidentally.

Lovins: I think you're in a class by yourself.

Kahn: No, I'm neo-conservative. I tend to confuse the discussion a little bit by taking the neo-liberal part of the New Class and using them for the whole, which is not a bad thing, because they are the most prominent part of the New Class. The whole **Public Interest** crowd would be New Class but very much not neo-liberal. Sometimes my friends ask, what do I mean by neo-conservative? Well, I'm conservative, but you can't trust me.

What I don't like about the New Class is the way they push the squares around. They have a total contempt for the square religions, dogmatic religions. You notice how the reporters just couldn't cope with Carter being a twice-born Baptist? They just ignored it. They couldn't handle it.

Take the hunting issue. I used to do talks at Harvard. I would ask the kids, "How many of you have 3 guns at home?" About 30% of the class would raise their hands. And I asked the others, "Why do they have 3 guns?" No one knew — shoot blacks, protect against the government? I turned to the 30% and I said, "How many of you got your .22 at the age of 12, plus or minus 6 months?" Every hand goes up. "How many got your shotgun at 14, plus or minus one year?" Ninety percent of the hands went up. "How many got a .30-caliber at 16, plus or minus a year?" Eighty percent of the hands go up. I'm trying to teach the other guys they don't know anything about their own country. You ask them, "What's going on?" They don't know.

You live in a hunting culture. The best way to understand a good deal of America is to look at it as a hunting culture. Take a place like Hudson Institute. Thirty-five staff members: one hunter. Twenty-two sub-professionals: twenty-one hunters. The twenty-second has constant pressure on him to hunt. I checked also with twenty-two taxi drivers in town. All of them are hunters. Every school teacher who is local is a hunter, none of the imported school teachers. None of them. It's a two-class society in the United States. But hunting is the clue. The rich hunt, the upper-middle class doesn't, and the middle class hunts, and everybody who is rural hunts.

If I had to ask myself, what's the single biggest problem in the United States, I would say, we tranquilize our children. The hunters don't. The key to the raising of a square American with the kind of character structure I want to talk about is the hunting culture. Let me give you an example. When my son was 15, my wife and I were having a big weekend, she wanted to call her mother to babysit for him. I said, "You can't babysit a 15-year old boy. You just can't do it." And she said, "He'll burn the house down." I said, "You're absolutely right. But he must be given the opportunity." She won the argument, of course, and the grandmother came.

We happened to do a small study, not a study but just sort of a quick look, at this issue of when do you give children responsibility. In most cultures it's 12, 13, 14. Henry the Fifth was his father's general at the age of 14, ran the War on Wales. He was actually a general. Alexander Hamilton was the master of a ship at 16, took a ship from New York to Cuba and back. Washington surveyed the western state of Virginia at 17, ran an attack against a French fort at 19. Roughly the age of responsible jobs ran around 13, 14, 15. And I happen to believe that if you defer maturity, you never catch up. My wife said, by the way, "But notice something, none of them was left alone at night." The grandmother comes.

Notice what happens to half of America. You're given a .22 at 12. You can kill somebody with a .22. It's a dangerous weapon, right? And you could kill

somebody with it. That kid is trained to use that .22 if he's in a rural area. Somebody, an older brother or a Black in the South, will give him nearly two years of training on how to make a camp, break a camp, use the gun – very low accident rate, nearly negligible. At 14 he's given a shotgun. Now, you can kill several people with a shotgun. At 16 he's given a .30 caliber. He's trained, you know, to be a man, with a man's responsibilities and a man's capabilities for damage.

Do you know why voting age is 21 in most countries? Because they thought you shouldn't vote until you'd been an adult for 7 years. Voting was for the older, more responsible people. Twenty-one was not their idea of adulthood. You're an adult at 14, but that doesn't mean you have a right to vote in the councils of the nation! You know what is the nuttiest New Class project ever made? The American Civil Liberties Union decided about 4 years ago to liberate the last minority in America which is still enslaved, and this turns out to be children under 18, who basically have no rights. And they wanted to give the kids a lawyer. I explained that you can't run a family if the kid has a lawyer. It can't be done. No way. Well, it turns out you can in a New Class family because it has a more complicated family structure. You can't run a middle class family if the kid's got a lawyer, let me assure you.

Brown: You'd have to have 3 lawyers.

Kahn: I was asked by Justice Burger to give a talk to a meeting he had in Milwaukee that was supposed to be 50 years after Comte's lecture on the "Causes of Popular Dissatisfaction with the Law." So I read the document, and it reads very well today. It says the one thing that people can't stand is to treat the law as a game with rules. There are 3 kinds of model of legal process. One is a due process model – everything should proceed according to due process. There's a crime-control model. This is where you keep the criminals down. And then there's a kind of a justice model, how often do you convict the innocent and how often do you let the guilty go. A kind of efficiency model. It's obvious that any system has to balance all 3 problems – efficiency, crime control, and due process. I would argue that our system has sort of gone manic on the due process.

Lovins: I think that instead of efficiency equity might be closer.

Kahn: Yes, equity's better, although with equity you might let the guilty free.

Brown: I think the saying is, "It's better for 100 guilty to go free than the one innocent man be punished."

Kahn: I'm in the 10 to 1 ratio.

Brown: If there was a social compact that basically threads everybody together, then these rules would occupy a smaller part of the whole network by which people relate. Now, as this social compact appears to be breaking down a bit, then more and more rules are needed to glue everybody together.

Kahn: I think that's right.

Brand: Kropotkin goes the other way. He says you get more rules, and then the social contract breaks down.

Brown: But I think you need more rules as the informal and internalized rules become less effective.

Kahn: Part of it is a lack of understanding on how rules work. I don't know of any organization which can work by the rules and operate. The rules are simply not there for rigid compliance. They're only guidelines. And they also work in a funny way – if you violate the rule, you do it at your risk. It's a little bit like my daughter – "I simply am not going to approve of you fooling around with boys, but I'm going to be very unhappy if you don't." It has that kind of a tension in it. There's a lot of academic studies you'll see in which a guy goes around with a cop and he notices that the cop is violating the rules 3 or 4 times a day and he's startled. They never ask the question, could the cop do his job if he didn't violate the rules?

Brown: So how do you project all this? If these rules are obviously changing. . .

Kahn: If you have a system which believes it's legitimate, which believes it's working well, you can get away with these kind of changes. But if you have a system that teaches the kids that it's illegitimate, then you have problems. How do you do that? First of all, the way you teach history. There are 3 ways to teach history. One is traditional – there were giants in those days, their like will never be seen again. (A rather good description; I accept it.) There's a second way to teach history – clash of interest groups. The farmer against the rancher, both against the railroad, the west against the east, the bankers against the farmers. You've got to teach it that way, because obviously you want to tell the kids that people have interests, and they affect their behavior. The third way is debunking. The way we used to teach debunking history was perfectly OK. We'd say that Washington had warts, Jefferson had a Black mistress, and it was kind of interesting. You know what American history is now? A total despoilation of man and environment. That's all that's taught. We wrecked the Indians, we wrecked the plains, we killed the buffalo. The exploitation of Indians, of women, of children, of Blacks . . .

My wife went down to two of the best high schools in New York City about 3 years ago and asked the kids to name two heroic acts in American history, and they couldn't do it. How do you teach American

The American hunter as seen by the New Class.
(Rich Meyerowitz illustration in **New Times**, *Nov. '76.)*

Kahn: I stylize myself as a Stoic. My wife says, "You can't be a 300-pound Stoic." So I'm a neo-Stoic.

History without heroic acts? It's full of heroic acts. I would argue that any culture that doesn't teach you traditional history is in trouble.

One thing anthropologists did when they first started studying cultures was they saw that everything was relative. What they never noticed was that in every culture there were things that were not relative. Between countries everything's relative. In this country you can kill, in the other you can't. But every culture has, within the culture, absolutes.

Brown: You talk about the problem of the relativity and what sounds to me like the decline of the old values. And yet, one of the bases for an absolute commitment is the sense that resources are limited — that the world is a place with some kind of global relationship where people are part of a species or wider community that was not sensed before by the nation states or the ethnic groups. So some of the gaps in the relativity that's obviously part of modern technological society perhaps can be closed by this sense that there are limits. The limit is that you can wreck the place, you can blow it up, despoil it.

Kahn: I think it's stronger than that. My own guess is that in the long run the issue of protection of environment and ecology becomes a religious issue, much as you suggest, partly in order to perform the function you're talking about, partly just to protect the environment and ecology. In other words, calculations alone are not reliable. Super-ego is always better in some sense than ego. I know more about dieting than anybody you ever met, but I don't diet. Eating is an ego issue; dieting is a super-ego issue. I believe, though all my religious friends tell me I am wrong, that nowhere in the Old Testament or the New Testament is there any ecological position except where Noah saves the asps because they're God's handiwork. Almost every other religion that I know about gives a value to nature in its own right. You have no right to destroy the tundra unless you have to do it. The tundra was made by God.

Brand: Does Moslem put any value on . . . ?

Kahn: Moslem puts nothing. They are famous for wrecking areas. All the peoples of the Book.

Brand: This sounds strange coming from you, Herman.

Kahn: Remember, I'm going for religion here for operational purposes, not because I had a revelation. If you have a revelation you don't argue whether it's efficient or not. If God said, "Do it," don't argue. But this is an operational issue, and I'll argue, before you make the stuff religious, you better know a lot more of what you want to rule and what you don't. I'll make another bet, that any viable religion of this sort is gonna have to have the concept that there are areas which are, so to speak, industrial parks: do your worst. Because the idea of protecting everything just isn't viable.

Lovins: You could, as Ken Boulding does, regard plutonium as taboo.

Kahn: I certainly agree that the only way to handle nuclear weapons is to make them taboo. There I have no question in my mind. We have a whole program for Carter. You start off by making the point, the only purpose of nuclear weapons that's legitimate is to negate nuclear weapons. They are a taboo subject to handle a taboo problem.

Brand: Wait a minute, how does that argument go?

Kahn: The only purpose of nuclear weapons is to answer the threat of nuclear weapons or use of nuclear weapons. They are *sui generis* and have nothing to do with normal policies of any sort. OK. This is going to be the basic position of the United States. But we can't adopt this position in the year 1977 because we have obligations, and it's a new idea, and it's different. So we'll do as follows. As of 1980 we will not be the first to use nuclear weapons against a non-nuclear power. No matter what happens. Even if they're on our own territory.

Lovins: Can you use nuclear weapons against Russian troops in West Germany?

Kahn: Russia is a nuclear power.

Lovins: Right, I just wanted to clarify that.

Kahn: This is the Korean problem. If North Korea invades South Korea, no nuclear weapons.

Brown: Why do you give the space of four years? So everybody can get ready?

Kahn: Yeah.

Gray Davis *[Chief of Staff]*: This is going to be a boon for mercenaries. The Russians will hire the Cubans so that we can't respond.

Kahn: As of 1985, we will not be the first to use nuclear weapons against civilian targets. In other words, if the Russians invade Europe, we may use tactical nuclear weapons against the Russian troops, we may use strategic weapons against the Russian interior, like the railroads and things like that. Now, there are two forms of that rule — you will not use nuclear weapons against the civilians, or you will not use nuclear weapons against the homeland, one or the other. As of 1990 you'll not be the first to use nuclear weapons, period. Under any circumstances.

Brown: You'll not be the first, but you'll still retaliate.

Kahn: You'll still retaliate. The basic rule there is going to be tit for tat.

Brown: How does this system deal with proliferation?

Kahn: It doesn't try to stop proliferation. In fact it would encourage a certain amount of proliferation.

If you followed the rules I'm talking about, Germany and Japan will get nuclear weapons. That's one of the costs. I think it's a small cost, because they're going to get them anyway.

Brown: How does it differ from what we're doing now?

Kahn: As a matter of fact it's very close to the action policy. Not the declaratory policy, but the action policy. Schlesinger says, "The use of nuclear weapons in North Korea and South Korea is not to be ruled out automatically." Now that's a taboo remark. You're not allowed to make that remark, because you want to make this a religious issue.

Brown: So as you look at all of it, where do you see the next serious problem?

Kahn: Well, there are 10 third world countries which have programs in nuclear weapons right now, and our guess is that their programs will probably mature in roughly the late '80's. And then I think you will find an almost explosive diffusion following that. If Taiwan has nuclear weapons, then South Korea and Japan will get it, just as a sheer prestige issue. If Japan gets nuclear weapons, Germany will get it. Because to them it represents respectability. And they have legitimate defense issues there, actually.

Brand: What that's about is rank, right?

Kahn: A little bit.

Brand: Could you somehow reverse that so you get higher rank by not having nuclear weapons?

Kahn: I don't think you can.

Lovins: This is what Dick Falk writes about, that one promotes a psychological climate of denuclearization in which it comes to be viewed as a mark of national immaturity to have or desire reactors or bombs.

Kahn: Yeah, that's the language of the New Class — talking about the hunt as sado-masochistic, machismo, that kind of thing. Getting nuclear weapons for most of these countries can be a matter of status for them, but it's also a matter that if you're a prudent Japanese, would you really want to depend on the United States for your defense for the rest of history? History is a long time, as DeGaulle once said. The Japanese look at the United States and it looks to them like the Roman decadent society, the usual image of a decadent society.

Brown: In fact, that spectre is probably going to weaken our credibility more than anything else.

Kahn: Absolutely.

Brown: You made the point that you don't choose the future, you make it, and I suppose you meant you do things that then result in other things which you don't choose because you can't see them.

Kahn: You can choose decision points very often, but you don't know where they're going to go. Ecology uses this a lot, that you can never change one thing at a time. That's true whatever you talk about.

Lovins: Ken Boulding's Law of Political Irony is that whatever you do to help people hurts them and vice versa.

Brown: I don't know whether these kinds of questions even interest you, but how much choice do you really think there is?

Kahn: I would ask the following question: "What kind of people do you get?" If you act as if there's free will and people are responsible for their acts, you get one kind of person. If you act as if people and everything is determined, and they're not responsible for their acts, you get a very different kind of a personality. And since there's no question in my mind what kind of people we want, we have to treat people as if they are responsible for their acts and hold them to it. And I don't care what the real world has to do with this, because even if it's a deterministic world you get a preferable kind of people by treating them as if they have free will.

Brown: What if you ask, "Could Kennedy have kept out of Vietnam?"

Kahn: Without a question. He raised the number of advisors to 14,000 for the most trivial reasons. He passed around a memo saying, even though we're sending these 14,000 advisors, this does not commit us. We passed that memo around the institute and just laughed about it. You ever tried to pull 14,000 people out of a disintegrating country? You just can't do it. He literally didn't understand that putting in 14,000 advisors was a commitment much more solemn than a speech or a treaty.

Brown: If you want to we can go sit in the other room. It's more comfortable.

[Return to Governor's office.]

Brand: Herman, you're rather less pro-nuclear than many people think, aren't you?

Kahn: I've never been pro-nuclear weapons. Even in **On Thermonuclear War** I made the comment that it's just totally irresponsible for us to rely on nuclear weapons for our national defense.

Brand: How about nuclear energy?

Kahn: I'm more pro-nuclear energy now than I was. I've always been anti-nuclear energy on the issue of proliferation. I now think that barn door's just way open. If you try to shut that door now, you haven't noticed there's no walls, no doors. You've got 3 countries which have to make reactors, as far as I can tell. And will. That's Japan, Germany, and France.

Lovins: Why?

Kahn: Because they don't have any coal or oil reserves, and they don't trust the United States. They have to build reactors.

Lovins: They have lots of energy flux.

Kahn: So? That's in 1990 maybe.

Brown: So you don't see any problem in using nuclear fission reactors.

Kahn: I see problems. I would much prefer it if we'd never gone down that road. But we've gone down that road. We've gone very far, and I just don't believe in reversing.

[more →]

Lovins: England could have made a soft landing into a steady state economy, but instead they've run it as a failed-growth economy. Herman Daly says that all you prove by that is that if an airplane stops moving forward it falls down, but that doesn't mean that you can't design a helicopter or an airship.

Lovins: What's wrong with reversals?

Kahn: I don't think you can reverse it without breaking the alliance apart completely. Look, the Japanese and the French both believe that the entire oil crisis was caused by the United States in an attempt to reestablish our hegemony over oil. I would say like 3 out of 4 Frenchmen and maybe 1 out of 2 Japanese believe that. Right now. And there's sort of a truth about it. You know, whenever you have these paranoid beliefs, there's always a little bit of truth in it.

Lovins: You might be startled to hear that the man in charge of the French domestic nuclear program thinks there's maybe a 1 in 3 chance that most of the program will actually happen, and about a 1 in 3 chance that it will fall apart.

Kahn: Who's the guy in charge? They had a kind of a dissident element in their own program.

Lovins: They still do, and I'm not talking about the finance ministry either. I've just been asked by the French Government to do a soft energy path study for France. And they've just cancelled their Pakistani reprocessing plant.

Kahn: There's no question the French are now for the first time conscious in policy terms of the problem of proliferation. But I would bet you oh, 5 to 1, maybe 10 to 1, that no feasible or practical policy the United States could follow today will prevent proliferation or delay it more than 5 or 6 years.

Lovins: I disagree with that completely. Because in all the countries we've talked about, and all the others I can think of, there's a profound disagreement domestically about whether the program's a good idea. Whatever we do will help one side of that argument.

Kahn: It will help, but it won't change it.

Lovins: I think it will. Because the domestic political base, both public and private, for those programs hasn't metastasized yet.

Kahn: It isn't . . . . Look, the United States is the most influential country in the world. What I mean by this, even the anti-Vietnam propaganda against the United States, if you look at it, was a U.S. export which was exported back. There was almost no new language used. And these countries reflect our fashions, always. They don't reflect the governmental decisions (the single exception to the case is Japan). These fashions are fantastically different from what happens when people make decisions. You know what I mean? And part of the reason is these countries are not that democratic.

Lovins: I'm not talking about imitation, I'm talking about what is politically feasible for them.

Kahn: I'm saying that they have a problem, a genuine problem. They're not going to go for solar, they don't believe in it, it's too distant, it's too controversial. You're going to start investments in solar in say '85 or '90.

Lovins: Solar what?

Kahn: Conversion of electricity.

Lovins: Why should anyone be interested in that?

Kahn: Because they find it terribly useful for lots of things.

Lovins: It's two orders of magnitude more capital intensive than the traditional direct fuel technologies.

Kahn: If you're going to tell me it's not a commodity, I dare say you're wrong.

Lovins: I've worked with about 15 industrial countries in the past year. I haven't yet found any of them that can justify making more electricity than it has. Some of them need heat and fluids, but not electricity.

Kahn: You're telling me that there's no increase in need for communication purposes, for lighting, for appliances, for motors, for engines?

Lovins: Those are all trivial terms, and the countries have in general twice as much electricity as they need for those purposes. Take the U.S. as an example because it is the example in the world least favorable to this case. U.S. numbers run like this: out of all end-use energy, 58% is heat (which breaks down 35% below boiling point of water, about 23% above); another 31% is liquid fuels for vehicles – that's 89% – another 3% pumps things through pipelines – that makes 92% – another 4% runs industrial electric motors – that makes 96% – and the other 4% is all of your lighting, electronics, telecommunications, smelting, electroplating, subways, and domestic electric motors.

Kahn: I really just don't believe those numbers, but you sound like you've looked them up, and if you've looked them up, I've got to look at them. Now, when you say percent, are you looking at the electricity in terms of BTUs electric or BTUs for generation?

Lovins: I'm doing it on an enthalpic *[heat-supplied]* basis.

Kahn: Oh, there's a factor of 3 then, the other way.

Lovins: If you did it on a Gibbs free energy basis the numbers would look a little different, but the result would be exactly the same.

Kahn: I'm just trying to understand your numbers, that's all. I'm not attacking it, just trying to understand your numbers. England may have different tables than in the United States. When you see a table of energy in the United States, for every BTU of electrical energy they put 3 in the table. The reason for that is it takes 3 BTUs of fossil fuel to generate a BTU of electricity. So they look at the heat generation and they record it as 3. That's a factor of 3 in your numbers.

Brown: Anyway, he's saying that you don't need all this electricity, and therefore coal or oil or something or other is preferable to nuclear energy. Is that what you're saying?

Lovins: I'm saying direct use of fuels and solar heat and biomass conversion and wind and so on will all be preferable to electricity, because they supply the kinds of energy you do need directly at very high efficiency, without going to all the trouble and expense of making electricity.

Brown: The electrical demand is not going up, is that your view?

Kahn: We just did two sets of curves. One set of curves goes up a little less than 2% a year – it means you're overbuilt, you have more electrical plants than you need. And the other curve goes back to the old 7% growth, and it means we need a lot of plants. And we literally don't know which is right. This is a serious issue.

Brown: That's a very live issue in California because we're forecasting, and based on the forecasting, the Energy Commission will approve or reject new power plants.

Lovins: It makes a big difference because about three quarters of the money this country is proposing to put into the energy sector over the next decade or so is for electrification.

Kahn: There's a good chance they are forecasting too high, because they've been so used to 7%. They can't believe that that number may be dead. I've noticed that Babcock, Wilcock at Westinghouse are now talking as if 7% is coming back, and I see no reason to believe that.

Lovins: Yeah. Part of the problem is that because of this extra capital intensity, if you're trying to build that kind of device, you have an awful looking cash flow, and some of it has to show up on current account, so you raise the price. People then don't want to buy as much as you thought they would.

Kahn: No, no. There's a problem there which has to do with inflation. Utilities borrow money at 8-1/2%. If you have to pay 8-1/2% for capital, it doesn't pay to build electrical plants. The calculation that they make is of that sort, but the calculation is misleading. It doesn't take account of the increased income levels you get with inflation, but does take account of the increased interest that the utility companies are paying. In other words it's only a one-sided calculation, and it's crazy. It has nothing to do with the real world.

Lovins: Well, in constant dollar terms the cost of their nuclear plants is still going up quite a steady 20% a year.

Kahn: The problem there is the regulation issues, where they have to try to make those plants just foolproof.

Lovins: This capital cost escalation is an indirect market response to public anxiety because people think it's a dangerous activity.

Kahn: You know what that's like? That's literally the case of the guy who kills his mother and father and throws himself on the mercy of the court on the grounds that he's an orphan. The very people who created the anxiety, created the problems, created the regulations, now say, "Look, it's there!"

Brown: What about nuclear waste disposal?

Kahn: The government slipped completely. The biggest single disgrace in this whole area is that in the 30 years since World War II the government still does not have a policy for waste disposal. The reason they have no policy is such a tale of educated incapacity. Let me give you an example. I happen to believe that the salt mines are a very good place to dispose of the stuff. The government decided to try it, and they picked the only salt mine in the United States which clearly doesn't work, Alliance, Kansas.

Lovins: Oh, there are lots of others that don't work.

Brown: What do you think is the significance of the political differences that are going on in society?

Kahn: If you think of the New Left, protest, hippy, drug culture, joy-love culture, greening of America, small is beautiful, all this, as attempts to reform American society, the big scene you're getting next is a Counter-Reformation, which started about '68 - '69, but never had any leadership. Wallace tried to be that leader but just couldn't make it. Nixon was not the leader. It's the biggest movement going on in America today. It's partly a synthesis; it's not completely a Counter-Reformation.

Brown: All Counter-Reformations are a synthesis.

Kahn: Exactly. So what else is new? And it's kind of interesting. For example, 2 out of 3 Americans

like to identify themselves as conservatives today. But they're anti-business. "Conservative" had the connotation all my life of being pro-business.

Brand: What do they mean by conservative?

Kahn: Return to traditional values.

Brand: Such as?

Kahn: Respect for your father. Virginity, believe it or not. I don't know how much they're being hypocritical, by the way. But they want first of all good behavior in public places. They mean by good behavior: they don't want to see drugs or massage parlors on the main street. They don't mind if it's around the corner, you understand. For example, let's assume you have a small town, and the Chief of Police confiscates a pornographic film. I will guarantee that he'll show it that Friday night at the corner firehouse, and every male adult will be there watching. I said adult now, nobody under 16. And I'll make a bet that sometime during the next week the son of the Chief of Police steals the film and shows it to the 16-year olds. And his father knows it.

There's no objection to pornography in the United States; there's an extraordinary objection to public pornography. People think of America as a Puritan country, but it's not. I used to use the following as an example, but the recent revelations have made it less useful. I would ask an audience, "How many of you knew (I never said thought), knew that Jack Kennedy was probably the biggest womanizer of any American President that we know about?" And about half of the audience would raise their hands. The other half would look and their jaws would drop – "What are you talking about?" And I said, "This was widely advertised, widely reported on, and every American who wanted to know about it knew about it. But those who didn't want to know about it, it wasn't forced on them." You see, if you chose not to know about it, you could live in ignorance. That was terribly important in the system.

Brown: What do you think of the movement to push out into the public mind so much of the inconsistency and personal behavior that was formerly kept private?

Kahn: I think it's just sick. It's not a revival of morality. The people who are pushing it are on the whole New Class more than any other group, and on the whole it's their morality. Take the issue of graft. At Hudson we've always made the distinction between graft and corruption. Graft is a legitimate fee in certain cultures which you pay to an official for doing what he's supposed to do. In those cultures where they have this institution they always have a word for it – compteur, dash, baksheesh – and generally the word means, if you go back to the language itself, tip.

Corruption is excessive fee. The guy's getting more than he's entitled to, or he's doing something against public policy. Now we don't understand the distinction in the United States. What happens? Take Vietnam. Before we entered Vietnam, Vietnam was probably about the most honest country, I would guess, in that entire area. If you give a Vietnamese peasant 95 piasters and ask for a receipt for 100, he'll give it to you. You've got a legal right to it, as far as he's concerned. You give him 90 piasters and ask for a receipt for 100, he won't give it to you. They're very tough people. I mean, you're entitled to 5, you're not entitled to 10, that's his money. So if you audit, you keep it down to graft. We didn't understand the distinction. We said these assholes are just going to cheat us anyway. That's just not true. RMK was a big construction outfit with Vietnamese paymasters. They audited and RMK had no trouble with corruption. That was the only place in the Vietnamese theater that was audited. Every place else we poured in the billions of dollars without audit. We corrupted a society just by our own dumbness. I went down to the Embassy once when they were trying to put in a tax system in Vietnam. We have objective taxing in the United States, you know, where you report your own income. I said, "There's not a Latin country in the world that has an objective tax system – France doesn't have it, Italy doesn't have it, Spain doesn't have it, Portugal doesn't have it, Brazil doesn't have it."

Lovins: It doesn't work in England either.

Kahn: It used to work in England. Inflation killed it. England is our example of the place that was corrupted by inflation.

Lovins: We're about at the point now where 1/7th of all the income in the country isn't reported. It's one of the national pastimes. Whenever the Chancellor tries to regulate the economy he comes unstuck because there's all this extra purchasing power sloshing around.

Brown: So, what do you say the problem in England is? They overspend on their social service budget, or . . .?

Kahn: That's part of the problem. The biggest single problem in England is slack management, slack direction; dumb government; I would put third the union problem; and fourth the overspending social services. But all of them are disastrous.

Lovins: I think it's much more fundamental. I've watched the place change over the past 10 years. People don't want to work as hard as the French and the Germans, they like the extra pint and time in the garden.

Kahn: That's what I mean by slack management and slack labor.

Lovins: It could have been, with really visionary management, a soft landing into a steady-state economy, and instead they've run it as a failed-growth economy. Herman Daly says that all you prove by that is that if an airplane stops moving forward it falls down, but that doesn't mean that you can't design a helicopter or an airship.

Brown: They're not working as hard as they should, is that what you're saying?

Kahn: Let me give you one example of how bad it is. I could find you, maybe not today, but a few years back, middle English firms where management took off early Thursday and didn't come back to work 'til late Tuesday. That's a 5-day weekend.

Kahn: The main reason why I think the world is basically safe in terms of food is it's going to eating meat, and meat gives you a factor-of-10 insurance. You can always give up the meat and go back to eating grain.

Lovins: Of course when we had the 3-day week it made scarcely any difference in productivity. They value the quality of life very highly, for the most part.

Brown: Well, what does that do? Is quality of life going up or down because of this, or does that depend upon your values?

Lovins: It may have gone down a bit lately, owing partly to mismanagement. Our only real growth sector these days is local government, and that's the employer of last resort. Essentially we're all taking in each other's washing, except it's bits of paper, and everyone is a bureaucrat now.

Brown: But isn't this what happened in Uruguay, where after a while 50% of the people in one way or another were working for the government?

Lovins: Well, something like 3/4ths of the British investment flows now run through either central or local government.

Kahn: No, there's a difference there. Uruguay literally tried to put everybody on a sort of pension or unemployment. England had three separate problems. The first problem was they were being passed by the continent. When World War II ended, they had about twice the per-capita income of the French. The French now have about three times the per-capita income of the English. That makes a big difference. You know my idea that the very religious groups are good for a country? The English have never been deeply religious, despite what history says, The Welsh have been religious, the Scots have been religious. England has had this thin veneer, like when Cromwell was running the place, but basically it's a bunch of slobs.

Lovins: No, it's a very civilized country.

Kahn: Very civilized. We have no disagreement — slight difference in terminology.

Brown: Schumacher thinks things are better in England now than they were before.

Lovins: In some respects he's right. But I'm more uneasy about politics than before, because we've been skirting a very nasty kind of left-wing fascism lately. And I'm concerned that in the 10 years I've been there, we've lost a lot of ideological tolerance.

Kahn: You've done more than that. The place is under a real social strain. It is one of the most civilized countries in the world. Let's start from that point. First and foremost, you have to remember that not everybody in England shared in this. Nobody lives better than an Englishman who has a good income. But the bottom does not live that well. The second point, which I think is terribly important, is you really have mismanagement, and mismanagement of a sort which is hard to visualize.

Brand: That's a term you use a lot. What's it mean?

Kahn: Take today, they're trying to control spending. They're trying to control it with the very high interest rates. But all the stuff they're spending right now is government spending, and that isn't controlled by high interest rate. So what the hell are they running the interest rates up for?

Lovins: Trying to bring the money back into sterling.

Kahn: But that's exactly what's increasing inflation. There's perfectly good analysis in **The Economist**, which is not the dumbest magazine in the world. You look at the columnists, and they spell it all out, and it's well understood in England, but nobody has the courage to cut the social service budget at this point.

Lovins: Because the Labor Party is in thrall to its left wing, yeah.

Kahn: There's no integrity in the government. This is a world-wide problem, but there's nobody there who can be called a statesman — who's willing to lose an election, if necessary, to get a program or principle established.

Lovins: There are a few people in the country who could do it.

Kahn: I can't think of one man, but you may be right.

Lovins: Roy Jenkins, Jo Grimond, but their own parties won't have them, for one reason or another. They're not acceptable to large groups which have veto power. The country used to run on consensus, now it runs on veto.

Kahn: When Heath came in, back in '72 - '73, he came in on a platform of integrity. He was going to make the right decision, and if he lost, he lost. He had a confrontation with the miners and he backed down, because he would have lost the election. Then he had a confrontation with the dockworkers — this was the law of the land issue — and again he backed down. Now this is serious, because they had to change the law. He put these guys in jail and took them out, because he didn't want to lose the election. Then he had another confrontation with the miners. This time he started to make it a question of principle. But you can't do it. The principle's been discarded.

Lovins: He was compromised.

Kahn: He was compromised. All right, let's assume he had not compromised himself. If he had gone down the first or second time, he could then have come back three years later with a mandate. There is no indignation in England today. What they need is a DeGaulle, say, or an Adenauer, maybe a Governor Brown, I don't know you that well. But somebody who stands for principle and integrity and

Kahn: In the New Class theology the only real value is a human life. You're never entitled to risk human life.

is perceptive. And I believe you have to go through that history of losing that terribly necessary election to show you mean it and then coming back with a mandate.

Brown: If that's the British problem, what's the American problem, because it certainly looks like we've been having a problem.

Kahn: Watergate was, I'll argue, a very big problem, partly an accident. It established the principle that the President doesn't own the White House, which is an important principle to re-establish. But at the moment I don't think we have any serious big problems. People aren't used to not having problems. They can't stand it. So they ask, "What's the problem?" And the answer is, "There ain't any, I'm sorry."

Now, you may have a serious problem if Carter actually goes through with his program within the first year, of reverse inflation. He has no intention of doing that, he's perfectly clear. Incidentally he's been doing it with great skill. Remember he sent Howard Samuels to the national conference of mayors? Now, Samuels is not taken seriously by very many people. He's just one of the early Carter supporters, so the mayors' first reaction is, "Maybe he's going there just as a courtesy." Samuels makes an announcement, "There'll be no money for cities." That's a serious matter. They say, "What do you mean? He promised." "Yes, but remember in every case he qualified the promise – if there's no money, there's no money." So, they say, "We don't believe you." He says, "I'm sorry, but there'll be no money for cities." Now, they couldn't get angry. First of all, you can't take Samuels that seriously, he's just not that big a person. Secondly, 90% of them are bucking for a federal job – they have no intention of picking a fight. So Beame made a kind of a weak speech, "We trust the President will live up to his obligations," and everybody gets very gloomy. He's going to live up to them and give them small amounts of money, I'm sure. And they'll be grateful, because their expectations have suddenly gone way down.

Brown: So your point would be that there aren't any real serious political problems that are structural.

Kahn: The biggest problem in the United States is the enormous alienation which the average voter and citizen feels towards the system. I'm sure you've seen the poll data. If you asked in '66, "How do you feel about the leadership of big business, about the leadership of Congress, about the leadership in the White House, about the leadership in your church," about something like half to two-thirds would vote, "Approve very highly." That number is like 10 - 20% today. It's gone down pretty steadily in the 10 year period. The attitude is a little funny when you look closer at it. "We think you have to have big business, but we don't like big businessmen. We like a Congressional system of government, but we don't think the current Congress is doing very well. We want to have a President. . . "

Lovins: Aren't you saying there's a general loss of legitimacy?

Kahn: That's the next step, when you start challenging institutions. There's a general acceptance of institutions, but not of the men who run them. That's the first step towards illegitimacy.

Lovins: I'm not sure about that at all. I think, for example, that the legitimacy of the industrial ethic is up for review right now.

Kahn: That's almost completely New Class now. There was a short period of time at the end of the Vietnamese war when the protest and reformation drew in a lot of people. You know what drew them in, by the way? The two things which forced the Americans to active rejection of the Vietnam War was the Calley case . . . (where he was actually wrong, in my judgment. It's one of the few cases where I disagree with the average American, who thought Calley was mistreated, which is absolutely insane). . . and the drugs. You just can't draft people and send them to a drug environment. That's not tolerable.

But as for the general disapproval of the way things are being run, I'll make a bet that 2 or 3 years from now you'll find those polls reversed. I believe that that negative vote represents a genuinely reasonable scoring of performance. It is healthy. In other words, they looked at business, and business performed badly. The government officials performed badly and they recognized it.

Elizabeth Coleman: Why is it going to turn around in 3 years?

Kahn: Because I don't think you'll have the same bad performance. I think '65 to '75 was a very special period in United States history – very special – and any attempt to extrapolate that decade into the future is going to be very misleading.

Lovins: Why do you think that?

Kahn: First and foremost, you had this enormous surge to control of a group which had never before had control of anything. You remember the term "book learning" we used to use? Now that term can't be used in America any more.

Brown: There are more people who never run anything because more people spend more of their time going to school. Apprentices learn their job in a junior college, not so much on the job anymore.

Kahn: And it doesn't work. I recently talked to Sid Warburg of the Rockefeller Foundation, and he said, "Take agriculture schools today. When I went to agriculture school, two-thirds of the faculty had been born and raised on highly productive farms, and they knew what they were talking about. It's

just not true today in the United States, and it's completely untrue in foreign countries. Both sides just read books." So what happens, they take 100 of the top experts, put them through the training course at Erie, the rice farm, and none of them are able to get more than like 30% on the exam. Any farmer would have got a 100% on the exam.

Brown: You're saying that the skills that are being imparted are not relevant to the task.

Kahn: Yeah. Let me just give you a quick example of this, how both Schlesinger and Sorensen don't understand how the presidency operates. You remember these are the experts, the historian and the President's assistant?

Brown: They wrote the two big books.

Kahn: They wrote the two big books. And both books have the following scene. They're talking about the Cuban invasion, Bay of Pigs problem. The National Security Council sits around a center table. In this case you also had Senator Fulbright there. Normally he wouldn't be there, of course. There are five people sitting at the table. Then there's a lot of people sitting in the back, including General Twining, the Chief of Staff. President Kennedy looked around and said, "Are we agreed?" And nobody raised a voice, so he said they were agreed, and Sorensen said they were agreed.

They hadn't agreed at all. Nate Twining was waiting to be asked, "Nate, how do you feel about this?" and he would have told him how he felt about it. He had a whole dossier there. But he's not about to interrupt his boss, particularly with Senator Fulbright there. He's had a lifetime of training. They had no sense that those guys in the back of the room are not part of that meeting, and will not raise issues unless they're asked. Later on, Nate said, "I never agreed to that plan." Sorensen and Schlesinger said, "He was there in the room when the decision was made." They don't understand! And my jaw drops.

Lovins: The whole English civil service is a classic case of educated incapacity in a sense. In a deeper sense it isn't. People are promoted there by their ability to write precise minutes and witty essays. It's a verbal culture that runs on paper.

Kahn: They all write incredibly well. It's indecent.

Lovins: The result is that we have a civil service that is almost entirely innumerate. They can write white papers entirely out of their heads, but they wouldn't recognize a rate and magnitude problem if it came up and bit them. I then went across the channel to France, which is run by very clever polytechniciens, and I rapidly concluded, if you want a mistaken policy to be executed with great efficiency, get the French to do it. I then looked back again on my side of the channel and said, "Gee, maybe we're really better off." But being competent with numbers selects against you in England. You're considered too clever. Clever in a derogatory sense.

Kahn: Too clever by half, is the British phrase. Whenever I hear that phrase I want to hit that guy.

Lovins: It's said to the guy who in a sense breaks the feudal code by working with his hands. My first day in Merton as a Fellow of the College I had just moved into my room and I couldn't open one of the cupboards because the handle had broken off, so I was rigging a piece of parachute cord for it as a handle, and one of the college servants passed by and saw me doing this and was horrified. He said, "Oh, sir, you mustn't do that." And being American and naive I had to have it explained why I mustn't do that. It was because college servants might see me doing it, and I would lose face, and so would they, and it would all be very awkward.

Kahn: There are only three countries in the world where an engineer will pick up a shovel – Canada, U.S., and China. In England the engineer is a serf. His status is so low it's unbelievable. Hence, where the research is good, the application is worthless. They have no vote, no influence, you know what I mean? They're treated as servants.

Lovins: Whereas on the Continent they have high status. It's a title – Engineer such-and-such. It's the old division of the theoretical and the manual again.

Kahn: I think it's just aristocrats and servant. The engineers are lower class people. They're trade.

Lovins: Like surgeons in England.

Kahn: That's one of the reasons they make really dumb decisions all the time. They just don't ask the guy who knows what's going on. He's not invited to that meeting. Now they have a basically correct position – the expert should be on tap, not on top. That I agree with. I think Americans make the opposite mistake of putting engineering too high. We give them too much status.

Lovins: I think there's very little understanding in our own scientific and engineering community of the limited role of that kind of expertise in public policy.

Kahn: But if I have to make one mistake or the other, I prefer giving engineering too much status.

Lovins: I wouldn't, I think it's very dangerous.

Kahn: I agree. Both mistakes are dangerous, and the question is which one do you want to make?

[more→]

Brown: Some of the gaps in the relativity that's obviously part of modern technological society perhaps can be closed by this sense that there are limits. The limit is you can wreck the place, blow it up, despoil it. That does have a certain absolute quality.

Kahn: I think it's stronger than that. My own guess is that in the long run the issue of ecology becomes a religious issue. . . . The only way to handle nuclear weapons is to make them taboo.

Lovins: I'd much rather subordinate "we the experts" to "we the people."

Kahn: We the people, yes, but not we the aristocratic, very intellectual, very witty, very well-writing people. You see, in the old days they did things.

Lovins: I'm a Jeffersonian.

Kahn: Remember, these kids used to be raised to be able to run things at age 12, the ones who went through the British school system. They broke with their family at the age of 7. They had the very tough public school system – cold showers, beatings, all that nonsense. I once made a speech in England where I said this system is great, you get 90% men and 10% homosexuals. And a guy there said, "You've got the figures right, but reversed, Mr. Kahn." By the way, in any tough society which raises the kids toughly this way, you always have homosexuality as an outlet for the kid who just can't handle it. Tolerated. The kids were trained to lead. I don't think that's true any more.

Brown: Certainly in this country there are a lot more people waiting a lot longer to run things. They're spending more time in college .

Kahn: They never have responsibility. We've created this adolescent period between boyhood and manhood, which actually is an American invention. The whole concept is now world-wide, but we were the first. The adolescent is peculiar – he hasn't got responsibility, but he's got rights. He hasn't got duties but he's got privileges. He hasn't got a job, but he's got aspirations. If you wanted to corrupt somebody, you couldn't do it any better. Access to money, access to girls, but no marriage and no child. It's all privileges, rights, prerequisites – no commitments. You used to have a commitment: you've got to get through college, and you've got to do well. That's not true anymore. We're very forgiving. If you wanted to debauch society, that's how you'd go about it.

Brand: Once you're on that path, how do you get off that path?

Kahn: Well, the kids themselves know it. They go for Outward Bound and this sort of thing. The Englishman went for the grand tour, when it was dangerous. He went through the Balkans. He went through survival training. Incidentally, one of the tricks here which every culture which has tried to adapt to these things has picked up is dangerous sports. Skiing is terribly safe, unless you make a mistake, and you break a leg. Skin diving at 500 feet is terribly safe, unless you make a mistake. These are unforgiving sports.

Lovins: The extraordinary popularity of rock climbing.

Kahn: Rock climbing, this kind of thing. Perfectly safe if you don't make a mistake. But by God you're in touch with reality. There's no relative reality, it's absolute. The guy who thinks it's relative breaks his neck, and we settle that one.

Brown: Don't you think there's less of these unforgiving situations that Americans are put through?

Kahn: Take Eric, my son. He does rock climbing, mountain climbing, skin diving, but I don't understand lethal fun. I like skin diving: 10 feet. I don't want to depend on my watch for my ascent. I just can't risk my life for fun. I've done all kinds of incredibly dangerous things, but always for the job. It's always been my duty, as I saw it.

Brand: What sorts of things?

Kahn: I've gone all over Vietnam, for example, walked through VC villages talking to people, I've gone through very rough terrian where I don't particularly like to go – the mountains in Africa. . . .

Brown: Do you think the risk level in this country is going down, such that it's affecting our character?

Kahn: Oh, absolutely. If you want to raise a leader, it's got to be a little bit rough during his life. He's going to have disappointments, he's going to have tragedies, so on. Like the English public school system. Remember Wellington's remark, "Waterloo was won on the playing fields of Eton." It's a perfectly correct statement. Parents today would never be willing to send their kids to that kind of a system.

Brand: An enormous amount of the counter-culture, in that weird period of '65 to '75, was the kids finding their own risks.

Kahn: If you don't have the work ethic, you need something to replace it. There's a dozen things we can use to replace it. One thing is the tradition of the gentleman. The gentleman is a man with many many skills, in which he has a very high level of capability, none of which are useful. They're done because they're there. Now, as soon as you tell me

that they're not useful, my interest goes to zero. I'm not a gentleman. I'll take risks as part of a job, and that disciplines me.

Brown: Today risk appears to be less tolerable because of our effort to spread well-being to as many people as possible.

Kahn: If human life is the most important value, you're not going to risk it just to improve the guy's performance later. Now I would argue, you cannot raise a child well if you protect them from all potential accidents.

Brown: This is the idea that no one should fail?

Kahn: That's the final extreme. That's the end when you get to that. You're in trouble long before you got to that point.

Brown: Is this related at all to this theory of equality of outcomes?

Kahn: It's more related to a sense that injustice is not tolerable. There has to be a sense of justice in the sense of legitimacy, but not in a sense that everybody gets what he has coming to him, that everybody has a right to an equal outcome.

Brown: So among many people the inequalities that obviously exist for a variety of reasons are no longer legitimate.

Kahn: That's basically correct.

Brown: The problem is that if you say, "It is correct," then you countenance perhaps systematic exclusion from the system, or an insensitivity that compassionate wise people ought to try to alleviate.

Kahn: You have to start with a basic assumption that every system has its injustice, its inequities, its tragedies. Every system. So the issue is not are you going to eliminate injustice, inequity, tragedy, but where are you going to place it? To put it in its worst form, who do you want to be in the bottom 20%? Obviously you don't want to put anybody there, right?

Brown: Yeah, but in our society certain people have a higher potentiality for being in the bottom 20%, so people feel that that systematic process should be altered.

Kahn: Not everybody feels that way. This is a New Class idea. It's a question of guilt. You remember those New Class religions I mentioned earlier? They have one common characteristic. They rely heavily on guilt to keep people in order. I have a friend of mine, a Polish banker. He went to see LeRoi Jones' play which gave a very graphic picture of the suffering of the Blacks. At the end of the play, my friend went up to LeRoi and said, "What can we do to atone?" I said, "Sit down, you weren't here, you were in Poland." He couldn't understand it. He felt personally guilty. Now, I'll argue that one of the sickest characteristics of our society is the inability of the New Class elite to control their feelings of guilt.

Brown: They don't go to confession every day.

Kahn: That's exactly right.

Brown: Three Our Fathers, three Hail Marys.

Kahn: Then it's finished. Now you can go out and sin again.

Brown: No. Go out and sin no more, but if you do, come back on Saturday.

Kahn: Crime is committed mostly by young people. It's committed mostly by uprooted people. It's committed by people who have lost their churches. This describes the southern migrator to the north.

Gray Davis: I'd like to go back to this business of equality of opportunity versus equality of result. When I grew up there was this notion of contest, and what we were worried about was that everyone was at the same starting point.

Brown: And the same rules.

Kahn: The key issue is, do you define the same starting point in terms of a series of objective rules. Some guys can run 100 yards in 10 seconds, some may run in 20 seconds. They're not starting with the same physical equipment. They're only running the same track.

Davis: The only inequality that we brooked was inequality of ability.

Kahn: That's correct, but ability came out of the instructional system, too, to some degree. In our society a Scotch Presbyterian does best in terms of upward mobility, jobs, and so on. Why? Enormous interest in education. The same with Chinese, Japanese, and Jewish. OK. You didn't choose your parents, you didn't choose this educational orientation, you were born into it. If you come from one of these families, you can do well in America because you can do well in college. Now, take the Black in New York City. Most Black parents want their kids to learn good working habits, but they have an idea that teaching the good work habits should be done by the school. The school won't teach work habits in New York, for a number of reasons. In the rest of the culture people understand that work habits are taught by the family. It's just not fair. The fact that it's not fair is a heavy burden for the upper-middle class elites.

Brown: Because they have more information about it.

Kahn: Naw, the information was always there. I think the reason is that they have nothing else to feel guilty about.

Brown: You mean, as the extended family breaks down and your immediate responsibilities diminish, your more abstract responsibilities increase.

Kahn: Take a kid raised in suburbia. He sees no tragedy. Upper class suburbia hides tragedy. If you have a sickness in the family you don't talk about it. He sees a tremendously nurturtive system that cares about him, and it really tries to do things for him. He's spoiled. We're not giving the kids any sense that there's nothing wrong with having to wait 3 years for something, or 5 years. There's nothing

wrong with never getting it. You're not supposed to get everything that's reasonable.

Brown: Then, how does the parent who has the means, with all the surplus income floating around, where does he or she get the argument that a child really can't have something. You have to have a principle.

Kahn: There is a principle. Half the time you explain to the kid why you're doing it, because you're a democratic family. And half the time, it's "'Cause I said so." Because you also want to teach the kid respect for authority.

Brown: You don't hear that one too much anymore.

Kahn: In my family you hear it.

Lovins: Herman, what in your future makes people happy? That's what I still don't quite understand. Why will they try to do all this?

Kahn: Because in fact they understand happiness. That is, I don't know any culture in the world which ever taught, despite the Declaration of Independence, that you got happiness by the pursuit of happiness. No culture has ever taught that before. This is the first, and boy it's a nutty idea.

Lovins: But how do you do it?

Kahn: You get happiness as a by-product of other activities that you should be doing – being a good father, being a worker, being a good member of the aristocracy – that is, doing the things your family and class and nation require of you, and doing them well.

Brown: In other words "human potential" wasn't the goal. Has that ever cropped up in any literature 100 years ago? I guess the Greeks talked about it.

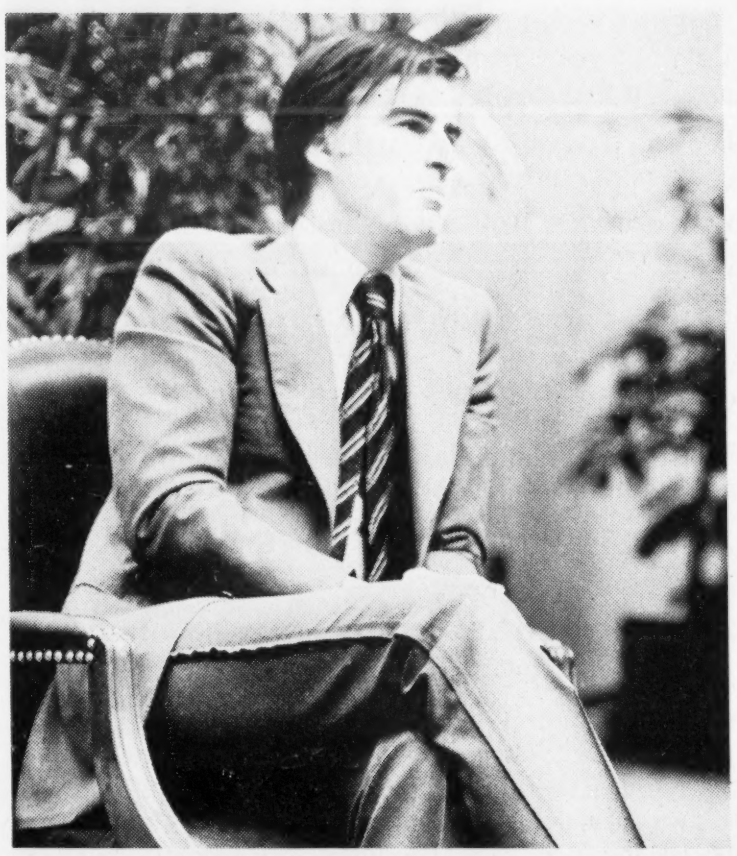
Kahn: Not the way we talk about it. You know, they talk about a very disciplined . . .

Brown: How about the Stoics? They were telling you how to be happy.

Kahn: Stoics aren't human-potential, at all. They're very interesting. The Stoics in Greek and Roman culture had a kind of a notion that, "We keep the system running, we don't care how other people act, we keep it running." They're really uncritical people. Their basic model was not the soldier doing his duty, but the actor in a play. Whether the actor comes off well or badly doesn't depend on the actor's efforts – that's the author's privilege. The author writes the lines. But at least you can go through the lines as well as you can. They were democrats; they ran an empire. They were anti-militaristic; they ran an army. They believed in equality of man and ran a slave system. And they ran the place. I don't think there's been a period of history where people had better governors except maybe some of the Chinese periods.

Brown: They had a great sense of nature. Nature in the sense there were certain rules, natural laws.

Kahn: Natural laws were very important to them. There's a right and a wrong way, and we see to it



that the system is run the right way. They weren't that small. They must have been 20% of the population, and they knew each other.

Brand: Was there a school for Stoics? How did you become a Stoic, get born one?

Kahn: You got born one; it ran in families. We don't care how other people act, our family . . .

Brown: Christians were very much influenced by them.

Kahn: They were very influential. I stylize myself as a Stoic. My wife says, "You can't be a 300-pound Stoic," so I'm a Neo-Stoic.

Lovins: Where in your taxonomy of values are such traditional values as, say, thrift and craftsmanship?

Kahn: They're not particularly American values, anymore. They were left back about 50-odd years ago. A lot of people still have them, but they're not . . .

Lovins: I think they're enjoying a renascence.

Kahn: No, they're coming back in the upper-middle class, who don't need thrift. Thrift is a game now, not a serious activity. They go to an enormous effort to save aluminum and tin cans, things like that. It's symbolic. They'll buy a $3,000 tape recorder but use a bike. It's not thrift as I would use the term.

Lovins: Craftsmanship?

Kahn: Craftsmanship is a great virtue but Americans don't have it. It used to bother the Germans that we had a rifle with stamped parts. The Germans said, "You let a machine do it? A rifle is something that's so important to you." We stamped it. Whenever there was a clash between craftsmanship and efficiency, craftmanship lost.

Lovins: Neighborliness?

Brown: You say life isn't fair. But politicians have to be.

Kahn: The poor are still neighborly. If somebody's evicted in a poor community, the whole block will help them out. That's much less true in the middle class now.

Brown: How do you explain inflation? Doesn't your program require us to solve inflation?

Kahn: Either solve it or correct for it.

Lovins: Essentially to define it away by indexing it. You can't direct it without knowing what causes it. I don't think any economist in the world can claim to understand inflation in industrial economies. Stagflation isn't supposed to exist.

Kahn: That's not true. It was predicted by Friedman and other economists.

Lovins: If they're so damn smart, why do we still have it?

Kahn: Because they weren't listened to, among other things.

Brown: How do we get rid of it in this country? Give me a three-point plan. Without raising unemployment.

Kahn: Two years ago people like myself were going around saying, "You'll probably have about 5% inflation, about 6% growth. We got that, by the way, from the House Economic Advisor's report. A government document, it cost $3.50. It predicts events almost perfectly. When that report came out, people laughed at it hilariously.

Lovins: Prediction isn't the same as understanding.

Kahn: That's quite right. You have two kinds of prediction problems. One is to predict the effects of current measures. The other is to understand what happened originally. Now, what happened originally was reasonably complicated. The main point about inflation I'll argue, and we understand it perfectly well, is first and foremost it is a monetary phenomenon. If you don't create more money, you don't get inflation. Now, that prescription is almost worthless, because if you don't create more money, you'll have a big deflation, recession, unemployment, bankruptcies, and all the unpleasant things that come with that. So you have to ask yourself two questions. Why do you feel it's impossible to print more money? And second, can you control it?

Brown: People want things done. We've got people in mental hospitals that need care. We have child care because women want to work. Why do they want to work? Because they need this $20,000 you're talking about, or they don't want to live with their husbands. We got to have new standards of safety, health, roads, energy investment because of these other things you talk about, so you got to do it. If you do it, you got to raise the taxes. If you raise the taxes, you lower the consumption, and the television tells you you got to buy more. So you print money or you raise it. But there's no big mandate to raise taxes. There are very few people who are saying, "Sock it to us."

Kahn: If you say that the government and the people are irresponsible, and that's why we have inflation, I'll agree. And I think they'll learn by experience, as the Germans did, and have the lowest inflation around. One of the problems in the last recession is we didn't learn enough from it. It was not a painful experience. Almost nobody went bankrupt, liquidity was not dried up. People said all the time it was the worst since 1929. That's accurate. That's like saying a little fire in San Francisco is the worst since the great fire in 1906. It's just not comparable. You know, one of the things which the founding fathers understood very well was that democracy is one of the hardest forms of government to operate, because it tends to get irresponsible.

Lovins: Jefferson says somewhere that the system that he and his colleagues set up will work fine in an essentially rural country. "But," he said, "if we all crowd into large cities as in Europe, we will become as corrupt as they."

Kahn: I think he's about half right. Maybe even more than half. Take New York City. You cannot find a single county board of supervisors which for 12 years pays short-term expenses with long-term debts. You can't find one. Really, I've looked it up. For 12 years New York City moved next year's income into this year and moved this year's expenses into next year. They did it openly and nobody kicked. That bright city.

Lovins: Governor, you're saying those actions were strongly motivated?

Brown: I'm not saying anything, because I like to ask questions. But I'm wondering whether or not there are certain things going on in society that are driven by forces that aren't just malice. There are more people living longer, who are not working, who need more care, technology, and attention. And there are certain kinds of poor people and disabled people who are more visible because of our social arrangements and due to the principles that are written down somewhere 200 years ago. When those principles are applied to these new situations, they cost a lot more money. And a lot of these folks don't have it in their pocket. So you have to come up with all these devices to give it to them. Free education, free transportation, food stamps, unlimited jury trials and appeals five levels up, habeas corpus, three courts . . . that's all coming from forces that I don't know can be slowed. Somebody might argue that it shouldn't be slowed.

Kahn: Let's take 3 rich men. One of them has 20 luxuries and can afford them, no problem. The second has 40 luxuries, and he just breaks even, has trouble. The other one has 80 luxuries and can't afford them and goes bankrupt. The guy who's got 20 luxuries is going to make it, and the guy who's got 80 is going to go bankrupt. It's a question of degree.

[more→]

Now let me give you a second example, which is really to the point. I have a theory I call the poverty of affluence. Lots of people come to the government and say, "We want this, and this, and this" – all the things you were talking about. If there's no money, you just say no. Everybody understands it, there's no problem. This is what the municipalities have learned since New York. If you haven't got the money, and you can't borrow it, you can't spend it. An incredible concept.

The basic problem is the following one. You're going from a situation where you can tell people, "We haven't got the money, forget it," to a situation where you tell them, "We've got the money for everything you've always wanted, only we can't do it all this year." And the people get angry. They'll accept the statement, "No to everybody." They will not accept, "Wait in line."

Brown: That's interesting. The trouble is that you have a group in here who is very sensitive to many of these problems . . .

Kahn: And they feel guilty if they spend it on A and not on B. They can't make choices of this sort. They can't give it to the Blacks because the Chicanos want it also. They can't give it to the Chicanos if the insane asylums need it. Their only way of answering this issue is to say "Everybody."

Brown: We've never had to make choices like this before. It was all grow, expand. A lot of these constituencies were not noticed, or were not represented. There was not this alliance between many of the new college graduates – Outreach, the public advocates, that whole group which has allied itself with many of the ills that haven't been corrected.

Kahn: Now we have the money and we've got to correct them, but we can't do it all simultaneously. People have got to get in line.

Brown: So you want patience and restraint.

Kahn: That is correct.

Brown: In a democracy with high mobility and high information flow.

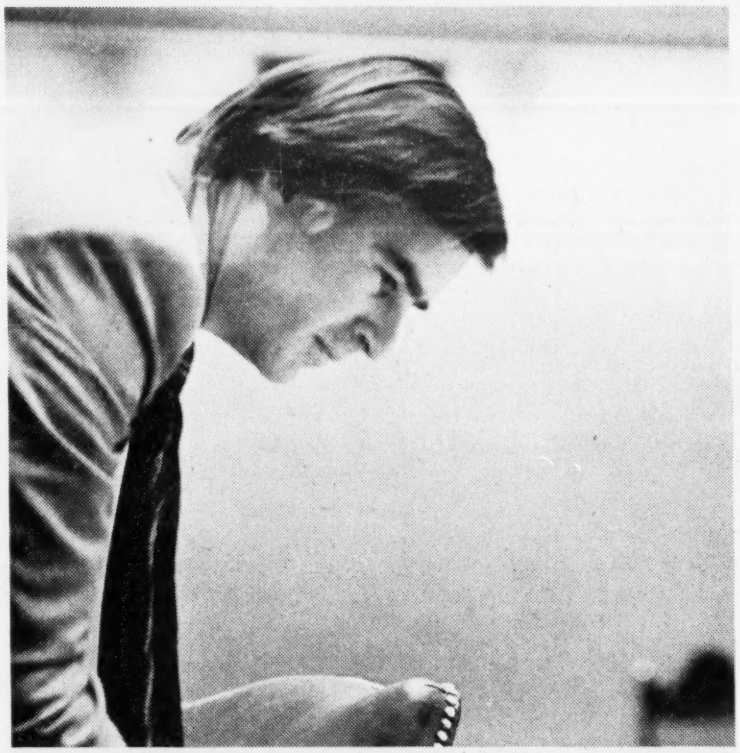
Kahn: You've always had it. The United States in this case is one of the most responsible groups of people in the world. Look at the labor unions. Remember the business that the President should jawbone them? If Ford had made a series of speeches one after the other that labor shouldn't get high raises because we can't afford it, you know what would happen? Every labor union leader would be forced to get as much as he can. He has to. In fact American labor unions took almost no raises during this two year period. They restrained themselves.

Brown: What are you saying, jawboning creates higher demands?

Kahn: Absolutely. He has no right to sacrifice his union's needs because the President singled him out.

Brown: So what does the President do in this case?

Kahn: Shut up, which he did, and it worked well – depend on the basic integrity of these guys, and their



Brown: How much choice do you think there really is?

basic good sense. By the way, Ford knew what he was doing. I had a conversation with him on that issue. He understood it. "If I jawbone, these guys can't do it. If I leave them alone, they'll do it." On a lot of these issues, there's nothing that works as well as frankness. One of the things that's impressed me about you in these issues, is you have a tendency to say, "I'm sorry, we can do one or two, we can't do five; decide which two you want." That kind of a speech works. But you have to be able to do that, choose between the claimants.

Brown: That's never been made a very explicit process. Has there ever been a speech made on the floor of Congress that it is now important to reduce the purchasing power of the working people of this country so that we can increase the well being of the social security recipient, so we can transfer from one generation to another certain amounts of wealth? Has anyone ever done that?

Kahn: We've done something even better than that, but we've done that too. We changed the budget process of Congress so that if you increase A you've got to decrease B. For the first time, and it's working. I think that the first person who gets up and makes the following speech, strongly, will look very good. "If anybody gets increases greater than the average increase in productivity in the country, then he's got a higher share of the GNP and somebody gets a lower share." That's the number one principle.

Brown: The number one principle of my budgeting is for each program increase there must be a corresponding program decrease. But by what principle do you make these decisions? You have to allocate

Kahn: Even if it's a deterministic world you get a preferable kind of people by treating them as if they have free will.

the goods in the public household. Before it used to be the market, and everyone took it with good grace. The market can cause bankruptcy, but government can't. You say life isn't fair, but politicians have to be.

Lovins: It doesn't always have to be a central government decision. The French have a real nifty device I've heard about, in which they would like corporations to devote some fraction of their profits to any of a long list of good works, including local cultural things, and I'm told what they do is tax the corporations, except that the tax is forgiven to the extent that the corporation applies an equivalent sum to any of those purposes, at its own discretion.

Brown: That gets very complicated, I think.

Lovins: As long as you define the purposes in ratproof language, apparently there's no need to activate the backup machinery that exists to see whether the money was properly spent, because those guys have just had it with tax men, and they don't want to get tangled up, so they just do it right. Local people, who probably know better what needs doing, are making the decision at a lower level in the political system.

Brown: Well, that choice among the claimants can be done when you have a certain period of growth, but as that growth slows down it gets harder and harder to do.

Kahn: I don't believe so. If it slowed down too rapidly that would be true.

Brown: You're predicting 5 or 6% growth. Do you agree with that, Amory?

Lovins: No. I don't really use GNP. I think it's a useless number. It's a category mistake. But even in your accounting terms I think 5% is too fast. I think capital and management and a lot of other constraints will prevent it. I think we're going to be looking for things that are more labor-intensive and qualitatively better work, while being capital-saving.

Kahn: I just don't believe it.

Brand: Well, Herman, do you think that Governor Brown's going to take over the Wallace slot now, as the only person addressing the issues?

Brown: Boy, what a terrible . . .

Kahn: In political statements you want a kind of brutal frankness, which is very much your style as far as I could see in the past. There's a thirst for that in the country and Carter's not going to satisfy it. Carter may turn out to be a great President. He's a very opportunistic guy, but he's also got a streak of iron in him. He's not weak. He goes for the long run. He tries to win wars, not battles. He's the only guy in politics I can see this year who's doing that. I hung around a lot with Ford and Nixon, and these guys go for battles, not wars. They have no strategic sense at all.

Brown: You don't think much of soft technology, whatever that means.

Kahn: No, there's nothing wrong with guys who think small is beautiful, or doing appropriate technology. The issue is, what it will cost, what are you giving up for it? Now, you argue that it's actually cheaper, more efficient.

Lovins: I think it's cheaper than not doing it. I guess you don't believe my analysis, which you haven't seen, but that's OK, because I don't believe yours either.

Kahn: There's nothing wrong with two scientists communicating objectively.

Brand: Are you guys claiming to be scientists? Excuse me.

Kahn: On some of these issues I'm claiming to be a scientist.

Brown: You guys want to insulate everybody's attic, but I'm not sure the people will.

Lovins: They save a hell of a lot of money and jobs if they do.

Brown: They'd save a lot of money if they'd bicycle to work, but I'm not sure so many would.

Lovins: You don't actually force anybody to insulate his attic, but it's awfully expensive if he doesn't. . . . There is a real world out there, I suppose.

Kahn: Yeah, there is a real world. *[It's 2 a.m. Everyone is getting up.]* You'll have to help me with these unforgiving sports, because I'm not very fast.

Lovins: I do about 100 days' mountaineering a year.

Kahn: That's the real world.

Brown: Gentlemen, thank you. ■

Labor and Environment

The Australian Green Bans

JACK MUNDEY
TALKING TO
ELLEN NEWMAN & DAVID GANCHER

A Green Ban is a workers' strike, not for higher wages or other direct workers' benefits, but for an environmental reason such as protecting a valued area from development. Since 1971 Jack Mundey and Green Bans have been a celebrated cause in Australia. Jack invented the term and, as a leader of the New South Wales Builders' Labourers Union, made it work. Recently Jack has been travelling the world like a virus. Since his visit in England last year, Birmingham has a Green Ban Action Committee about to impose their first ban – on the demolition of a splendid Victorian post office.

Jack was in the U.S. early this winter for the World Wildlife Fund meeting in San Francisco, which was when this interview occurred. He's good company – intense but easy. I guess that's what they mean by "charismatic." Though only here a few days he galvanized a number of environmentalists to go forth and court union involvement in issues such as nuclear plant construction. Jack was to have revisited America this February but was denied a visa by Secretary of State Cyrus Vance, who reportedly was under pressure from the A.F.L.-C.I.O. Reason: Jack Mundey is former head of the Australian Communist Party. So he is now probably due to be a celebrated figure in the U.S., the more so since the Ford administration let him in without trouble.

Since the interview was a long and good one, I and David Gancher, who is editor of **Not Man Apart**, *decided to split it and each print half. He took most of the early – cases – part; I took the later, more theoretical, part. Some portions we both printed. For the rest of this article you should send $.50 to* **Not Man Apart**, *Friends of the Earth, 124 Spear St., San Francisco, CA 94105, for the March 1977 issue. Or better still, subscribe at $10/year.* –SB

Ellen Newman: Why did "Green Banning" take hold in Australia and nowhere else?

Jack Mundey: It's unique in the sense that I think it's the first time in certainly the advanced, industrialized countries that there's been a coalition of workers with a social conscience, or unions with a social conscience, withholding their labor in the interest of broader community interests. Or else demanding that government or private capital investment be made in a way so as to protect the environment. And probably just as importantly, starting to commence the important process of examining the end result of our labor – which buildings should be built, which products should be made. Surely we have to question not only the unemployment problem, but also the mal-employment problem, which are both tied together with the whole issue of the social consequences of labor.

It is very carefully put forward by the Establishment that the environment movement is the preserve of the middle class, yet a cursory examination of where the working class live in the major cities of the world will show that they are living in the worst environment. They are living in the noisiest part of the huge cities; they are living in the worst housing and the dirtiest parts of the cities. There are not too many leafy suburbs where they live. And so it's a very nice myth to inculcate the workers with that they haven't an interest in the environment, that if they fight for the environment, this is somehow alien to their chances of getting employment.

Ellen: Tell me more about the difference between the European-style unions and the American unions?

Jack: I think the difference is ideological. The labor movement was born in Britain under very harsh conditions. It had more of a political bias right from the start. The very fact that the labor movement gave birth to the Labor Party in both Britain and Australia is significant. And even though the Labor Party in both those countries has, I believe, ceased to be a real expression of the working class, nevertheless the working class does have quite a substantial impact on them. So our workers have been a bit more politicized. Take the Vietnam war. We had seamen and dockers and metalworkers refusing to send supplies to Vietnam, where at the same time the U.S. had the East Coast dockers refusing to unload Australian ships because of this action. There are very few examples of real political action by the American workers.

I think there were certain things in Australia that gave rise to the Green Bans. One was the nature of the union of which I was a leader, the Australian Builders' Labourers Federation. It was a union that did non-tradesman work. And it was a union that had experienced a long period of corrupt leadership, the usual things – union leadership working hand in glove with management, blacklisting militant workers, engaging in thuggery, things that you know about. We resolved when we broke through and won leadership in that union to prevent this happening again to the best of our ability, so we did a number of things that I think are worthy of note.

We set about to what we call "civilize the building industry." That is, break down the uncertainty of the industry as far as possible by having a better continuity of work – forcing employers to keep workers on for longer periods and give some knowledge of what their program was, so we weren't just groping from day to day. We set about to egalitarianize wages with other tradesmen. We fought for the right of women to work in the industry – it had been an all-male enclave before then – and we won that. We engaged in stop-work-to-stop-the-war, and in fact led that campaign, where workers walked off jobs to join up with student and other progressive citizens in huge rallies. We organized rallies against the South African sporting teams touring in Australia, and we fought for our own Blacks and won some dignity for them. And we did the orthodox things, improved wages and conditions, so we hadn't neglected the basics. That allowed us to go into the more political actions.

Having said all that, we had an environment policy. At the time Sydney was being overbuilt with high-rise buildings, and there was a certain growing revulsion against this by what I call the thinking segment of society. And we in the union put forward that it was crazy to have 10 million square feet of high-rise space at the same time when there was housing shortages, when there weren't enough hospitals or schools or kindergartens.

It was ironic how our environmental activity actually commenced. It was a group of women from Kelly's Bush – bush is open forest land, rain forest in Australia. Kelly's Bush was

Marianne Ackerman, courtesy Friends of the Earth

Jack Mundey

part of Hunter's Hill which is a very fashionable old suburb of Sydney. A big millionaire developer had done a deal with the state government to knock down the bush land and build luxurious homes for the fortunate few. The women — all women by the way — calling themselves the Battlers for Kelly's Bush, middle-upper class, went through all the normal petitioning to councils, state planning authorities, the Premier, but to no avail.

In final desperation they came to me because they had read in the paper that I had spoken of things that I just recounted to you, saying that unions in modern society must look beyond the hip pocket nerve. They said, in words slightly more polite, "Here's a chance to put your theory into practice." And we in turn said that provided it's a genuine expression of the people in the area, provided it's not just a handful of people who are calling for the ban so as to keep their outlook on Sydney Harbor or something else, then we'll accede to the request.

Ellen: How did you determine that?

Jack: A public meeting was called. Over 700 people came to it, called within five days, and we acceded to their request, saying that this would allow them to have genuine participation in decision-making. We imposed the ban at their request so as to allow them to continue the negotiations for the retention of the bushlands as open space.

The developer immediately announced that he would ignore that use use scab labor to knock down the bush. Unlike here, we've got a highly unionized organization in the building industry. 70% would be in the union as against 24 - 25% in the States — so we had a very strong position. In retaliation to his threat we called a meeting on the biggest job of his in Sydney — a half-completed multi-story building. And the workers voted that if one blade of grass or tree was touched on Kelly's Bush, that half-completed building would remain half-completed forever as a monument to Kelly's Bush.

Well, this action really set the cat amongst the chickens because, besides insuring the retention of Kelly's Bush, it meant that all the developers and the government of the day, which was very closely aligned with the developers, came at it with language like "this is sheer anarchy"; "imagine Builders' Labourers intervening in what should or should not be built"; "Usurping the power of government"; and that type of thing. And we in turn said that we do not believe that unions must be confined to just electing their officials and being concerned with wages and conditions. We've got the right to intervene in anything concerning the worker, and his or her family or other people. We've got the right. And we don't believe that democracy is casting a ballot for a government every three years or four years. Democracy is everyday democracy. It is intervening in the issues that are of concern to people. And we are going to withhold our labor so as to allow those people to demonstrate their opposition to the destruction of the bushland. We think that's very much in order.

We call them Green Bans. In Australia a "black ban" is when workers withhold their labor and refuse to build a building or do some work so as to force that employer to pay a certain amount of money — that's "blackening a job." We hit upon the "Green Ban" because it was more descriptive of what we were about. It was a noble action where workers are using their labor so as to assist the community at large and not just to increase their own economic position. Green Bans became very very controversial in Australia. We were inundated with requests, and at the end of four years, we had imposed 42 bans, holding up 4 billion dollars worth of work.

Now, I think the strength of the movement was that we never arrogantly or arbitrarily went around imposing Green Bans. We always imposed the Green Bans at the request of a very substantial expression of public desire or community desire. And we imposed the bans, not as an end in themselves, but to allow those people in that area to have a greater say and not just leave it to the bureaucracy or the government of the day to make myopic decisions that they might regret later on.

Ellen: So you were in some sense buying time.

Jack: Sure. And for those who said that the union was going too far, we replied that unions are part of the whole community and have the right to have an expression, the same as the Chamber of Commerce of ITT or GM or anybody else. It was very interesting. On the one hand you had the more conservative union officials mouthing the same sort of statements as the captains of industry and the government saying that we were engaging in actions beyond the accepted, traditional domain of unions. But then on the other hand, we had progressive conservatives who probably were normally anti-union on most issues who on this issue suddenly found themselves on the side of the Builders' Labourers. We had people fairly high in public office coming out and saying so. So you had this polarization of society. The controversy raged about the role of unions in modern society. There were many threats to impose new laws to prevent us doing this, but the government wasn't too sure of its ground. What happened then was that more unions became involved in environmental action — we now have 14 unions active in various parts of Australia.

Because we always based ourselves on the residents we kept a respectability, even though the papers were trying to malign us (not the workers in the press, they were very sympathetic). We were just saturated with media coverage. We did a lot of our activity looking through a television lens. On the other hand the editorials in the newspaper were scathing.

When we were engaged in a bitter strike to civilize the building industry, the papers were really uptight, because we were engaged in some fairly advanced action. We used to occupy the job and say now that the democratic decision has been made by the workers to go on strike, any employer that tries to break the strike by the use of scab labor runs the risk of what will happen to his property. And we kicked down a few brick walls. Well, the papers just went off their brains. They pained pictures of Builders' Labourers knocking down all Sydney. This had a very detrimental effect and there was a lot of buildup against us. I received almost daily death threats and Judy, my wife, the same, and my son . Anyway, we got through it.

[Mundey goes on to talk about some of the other Green Bans — the Rocks, where the oldest and most socially mixed part of Sydney was preserved from becoming office buildings; another issue (not named) where the developers tried to buy Mundey off for $200,000; Centennial Park, 400 acres in Sydney saved from becoming an Olympic complex; opposition to freeway construction in the city; the Botanical Gardens, part of which would have become an Opera House parking lot; Fraser Island, the largest sand island in the world, saved from sand mining; and a nuclear power station near Melbourne, stopped for two years so far. Read about them in the March 1977 **Not Man Apart**. *Where FOE leaves off their part of the interview Jack is just getting into the uranium mining question. . . .]*

In September, 1975, we were able to get through the Australian Council of Trade Unions, which is the national congress of our trade union movement, a resolution calling for the banning of the mining, handling, and export of uranium. For a while the campaign against nuclear power had been building up in Australia, but we were a bit surprised when there was such an overwhelming vote at the congress for the ban on the mining. It was only a few months later when, under very strange circumstances, the Tory government came into power in December, 1975, around the issue of what we do with our resources. The one thing the Labor government was trying to do was to buy back some equity

Kelly's Bush Battlers (Secretariat), endearingly termed the "Upper Middle Class Morning Tea Matrons" by Jack Mundey, have proved to be one of the toughest and most efficient of the resident action groups.

These photos are from **Green Bans**, *printed by the Australian Conservation Foundation, 206 Clarendon St., East Melbourne, Victoria, Australia 3002 (price unknown).*

in our own country, because in the period between the end of the Second World War and 1972, when the Labor Party came to power, Australia's independence had just been sold to Japanese, to German, to British, and mainly to U.S. multinationals. There was a strong feeling that we should have some greater control over our own resources. When the Tory Party came to power, the first thing it did was to go to Japan and negotiate a new deal about the uranium.

David Gancher: Can they?

Jack: They can if they break the unions. You've got a position now that is almost coming to a clash. The union movement is under tremendous pressure to lift the ban. They are using, as always happens, business-oriented forces within the union movement itself to try and break it. When you consider that Australia has 20% of the known reserves of uranium, well then it's a very big issue indeed. Earlier this year the railway union noticed building material going to a new uranium mine. The miners are mining, but the transport workers, the railway workers, the dockers all refuse to handle the ore, so it's just piling up at the mine.

David: Is there no other work in the area for the miners?

Jack: It's the usual thing where the establishment has brainwashed those miners into going in and doing it. That often happens in small areas. But it is being negated by the fact that they can't do anything with it anyway because the other workers won't move it.

Anyway, this railway worker in Townsville, North Queensland, noticed building material going through to the mine to extend further buildings, and he was sacked. Then there was a national strike of all railway workers throughout Australia.

Ellen: On this issue?

Jack: On this issue. Now, part of it would be the usual union solidarity with the worker sacked, but also it brought about a better understanding and a sharper discussion about uranium mining and the whole nuclear question. I think this gives you the strength of the whole union movement when it's used in this way. Despite a hostile government, which we now have, they are able to hold such bans as the nuclear ban.

You have tremendous problems doing something like that here because of the hierarchy and the bureaucracy of most of the union movement, which is in the main business-oriented. I had discussions at Habitat with people from the United Auto Workers in Detroit, and they have a written policy that sounds pretty good. They believe that there should be a phasing out of cars and the development of public transport. I don't think they have gone beyond just theorizing about it, but at least they have a written policy.

David: Yes, but this year they opposed the clean air act.

Jack: I saw that. I think there are some very great inconsistencies.

David: They are being blackmailed. They think they are being presented with a choice between environmental quality and employment. As a matter of fact, I was going to ask you, how do the Green Bans affect the local economy? Did it increase unemployment or decrease unemployment?

Jack: I think at times it increased unemployment. With the redirection of capital from private commercial to private housing and flats , well, it meant no real loss of employment. I think it meant that our members would have gained more in actual money terms had they been employed on high rise office block development because when you are putting up that sort of development you can afford to throw a few more crumbs to the workers. But to the number of workers employed, I would say there would certainly be no less and probably more workers working on renovating housing and building flats and apartments as there would be in putting up high rise buildings.

[more →]

David: How about construction costs?

Jack: Per million dollars a lot more labor would be used in rehabilitation of housing and the building of new housing than in putting up huge office blocks.

Ellen: The smaller things are more labor intensive.

Jack: Exactly.

David: What is the effect of the whole Green Ban labor movement on multinationals? Has it driven multinationals out of Australia?

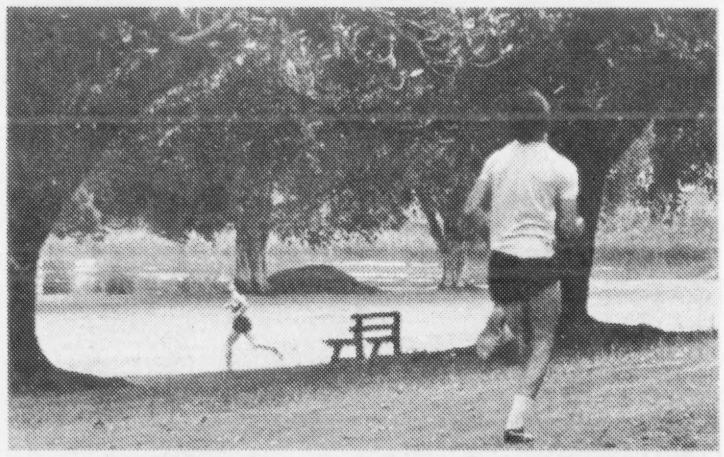
Jack: No. What is really happening in Australia now is a redirection of capital investment very much into the mining area. Australia is becoming a virtual quarry. In fact the whole manufacturing industry is being neglected in the very short term interest of huge expenditure in mining. That's where the profit is. And this increases active unemployment because the shift is to uninhabited areas.

David: Do you have plans to radicalize the miners?

Jack: Of course as a socialist I say it's only when we take over the means of production that there can be a real solution. There can be no long range solution under any form of capitalism. This side of that, though, we fight, as most people fight in countries like Britain and Australia, for a building up of the public sector as against the private.

David: I think there is a great fear of that in the United States. When you say public sector, people think of the Post Office, which is a symbol for bureaucracy, inefficiency, and a waste of money.

Jack: It is true that bureaucracies have tarnished the image of what could be possible under socialism, but it's interesting to note that public service has always been used for the private sector. For example, when the nationalizations occurred in Britain, what are they? They are the companies that have failed under capitalism, so public money is used to prop them up. I think it's wrong to think about that as a socialist proposition.



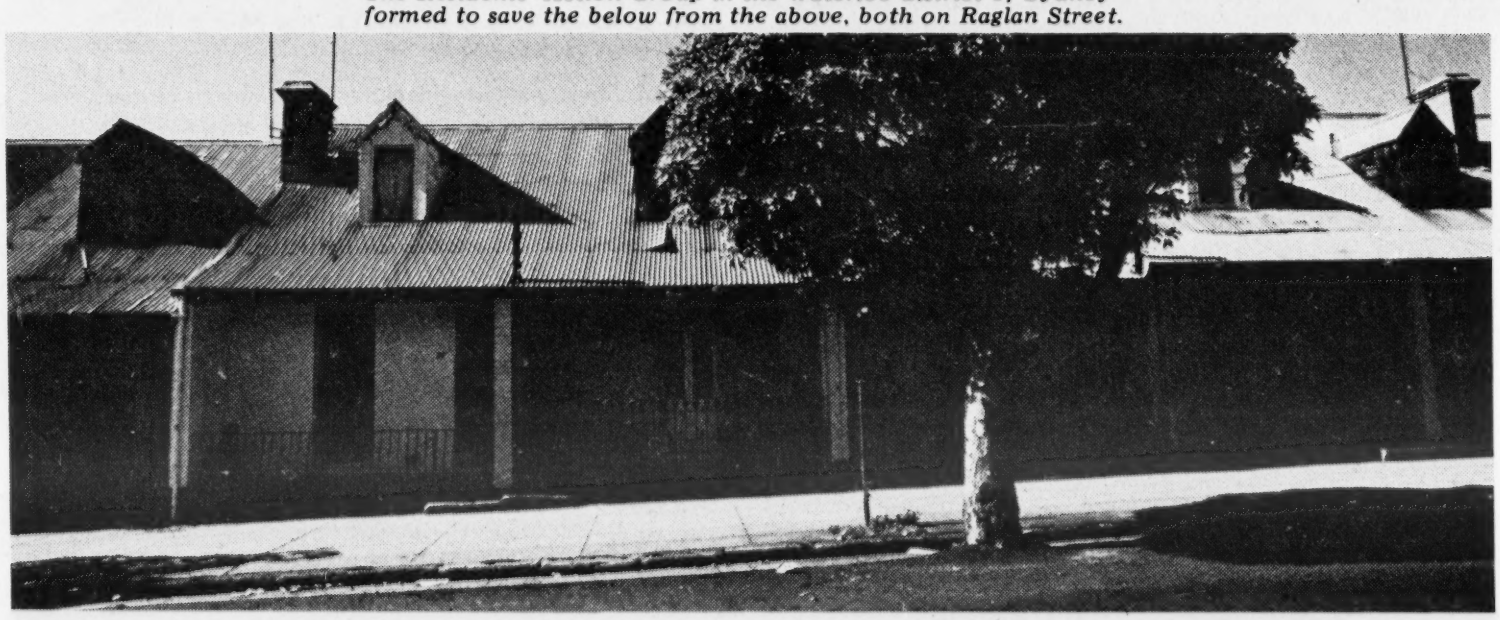
Centennial Park would have become an Olympic Complex.

The bureaucracy in the Soviet Union is as bad as here if not worse, but it doesn't shake my faith in socialism, because I think you go through primitive forms of socialism historically, and that's where we are at in the case of Russia, even after 50-odd years. But I think there can be no defense of capitalism, because it is so destructive. Certainly as an environmentalist, you can't show me anywhere where capitalism can maintain its basic greed of private profit.

David: Well, E.F. Schumacher has defended capitalism as being essentially more decentralized, having less central planning, having less central control than socialist countries. And he says such environmentally good things as small cottage industries, tweed manufacture in Scotland and that sort of thing, is possible under capitalism but might be more difficult under socialism.

Jack: Well then, Schumacher has got to be asked, how do you move from a multinational reality back to the small cottage production that he envisages? I don't see that happening. I think there has to be people's control over the multinationals before you can effect the sort of decentral-

The Residents' Action Group in the Waterloo district of Sydney formed to save the below from the above, both on Raglan Street.



ization that's got to come. I can't see that coming under this present social system.

David: Then how do we get control over the multinationals?

Jack: Probably after a few more Chiles or a few more outrageous incidents, there will be a certain revulsion of the people of the world against this. You know, when we say socialism, we say socialism under workers' control. There's got to be the decentralization; there's got to be more autonomy; there's got to be much more small decision-making, and not this great, heavy bureaucracy which has proven to be so wrong.

Ellen: What are your impressions of the possibility of the Green Ban sort of thing happening in the United States?

Jack: I see no real impediments to prevent the sort of coalitions that developed in Australia. I think that FOE and other organizations like it must use their initiative to get through to the people in the labor movement who are open and who can discuss these things. We've got a developed relationship now between the enlightened unionists and the enlightened environmentalists.

Ellen: How do you get to that stage?

Jack: I think the starting point must be an international debate amongst the working class. I don't mean basing ourselves on the lowest common denominator, but people like the Lucas aerospace workers in England, people like us, involved people like the ones I mentioned in Detroit. There's a group in Sweden; there's a group in France. I think you have to link up all these people and have a big debate among ourselves about what we think.

At the same time I think that environmentalists have a responsibility to think more deeply and creatively about the way in which they can get through and assist those well meaning and socially aware unionists, leaders and rank and file, who are in a strong position to directly influence workers.

Take the case of the railway union in Australia. Here's a union that's not left like I am. (I'm considered, you know, quite left.) Through the Friends of the Earth giving the leader of the railway union material and confidence, he is able now to get on television and articulate the case and fight really terrifically. That's how I see intelligent use of the Friends of the Earth and other environment action-oriented groups.

David: It's true the most locally successful FOE groups internationally are those like Les Amis de la Terre in France that work closely with workers. In Belgium if you're not dealing with labor, you're not doing anything. The whole anti-nuclear movement in France has been closely bound up with peasants, farmers, and with factory workers too. Where we get in trouble is in sophisticated second-industry dominated towns like San Francisco which has no industry to speak of — outside the tourist industry.

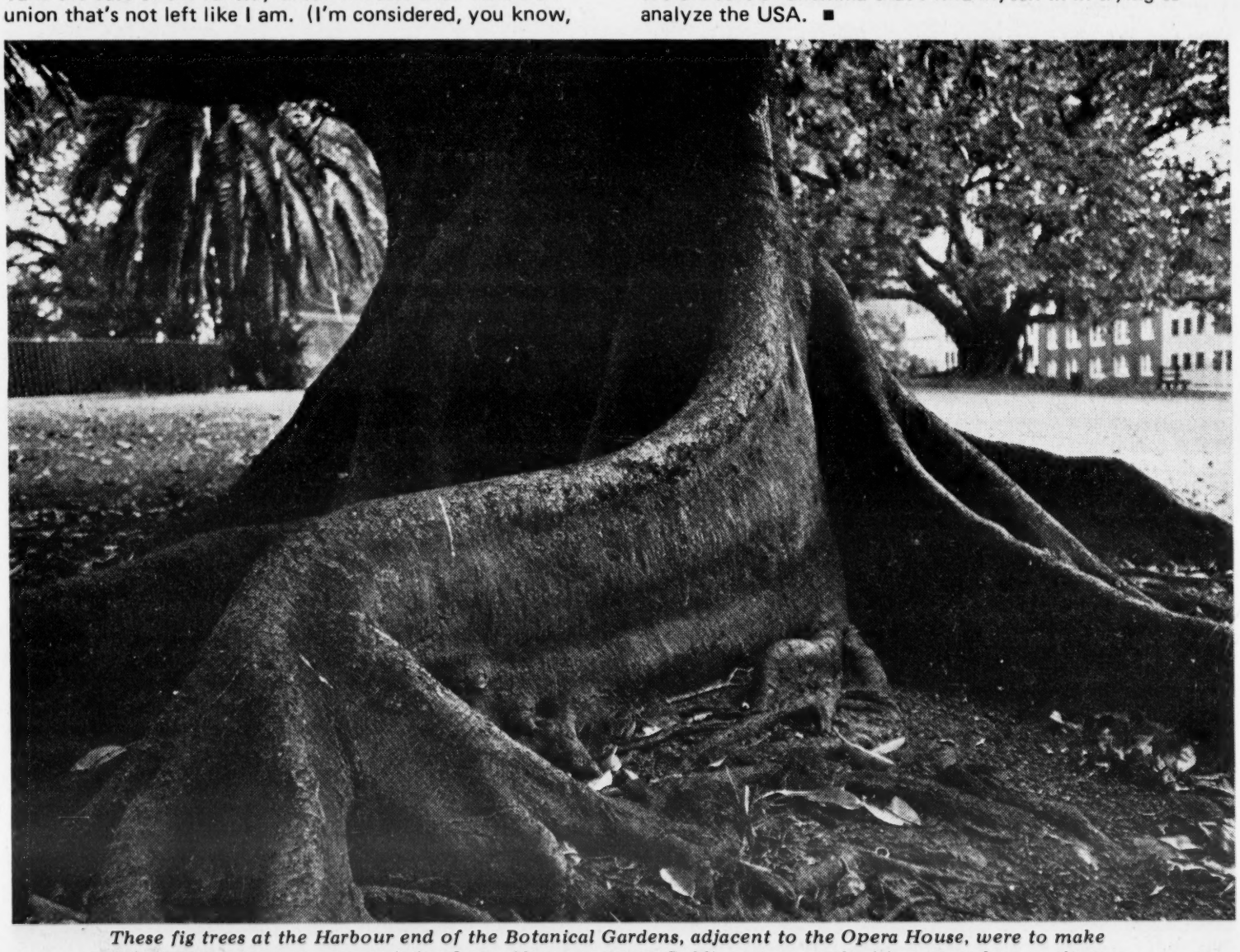
Jack: You're not having a shot at me as a tourist?

David: You're not a tourist, you're a visitor. You're not on a cable car.

Jack: I have been.

Ellen: In the U.S. the impetus seems to come from the environmentalists protesting, putting pressure on the government, lobbying. Then laws are enacted. Then Exxon or Mobil or whatever will take out big ads to say that they are socially responsible, they've cleaned up a lake. Though some of it may start in a grass roots kind of way, it all gets implemented through law, through the government. And then the enlightened companies try to beat the government to it. Is that different from what you see in other parts of the world, that process?

Jack: Yes, I think it is different. I think that the environment movement that you've got here is different because of the strength of capitalism here, because of the weakness of labor, because of the general affluence of the country, because of this individuality mentality that you've got here. It is very different. I think in some ways it's more advanced. It's the sort of dilemma that I find myself in in trying to analyze the USA. ■



These fig trees at the Harbour end of the Botanical Gardens, adjacent to the Opera House, were to make way for a multi-storey car park for Opera House patrons. Public outcry resulted in a green ban on the trees.

Ecology, Capitalism, Communism

BY JACK MUNDEY

As the relatively small Communist Party of Australia prepares for its 25th Congress in June 1976, it is interesting to note that this Communist Party is one of the very few parties in the international communist, socialist, revolutionary movements which really believes there is a global ecological crisis, notes this, and at least tries, in a modest way, to advance some socialist ecological policies and possible solutions to the most urgent political problem of all time.

Marx and His 19th Century Expose of Capitalism

Socialists generally consider Marx's analysis of capitalism to be not only correct, but to be brilliant in its analysis in the 19th century. The basic tenets hold good 125 years later.

At the same time, many people question whether the USSR, which is now nearly 60 years old, and the People's Republic of China, born 27 years ago, have fulfilled the hopes, dreams and aspirations of millions of communists, socialists and their supporters throughout the world in advancing the general concepts enunciated by Marx and Engels, as well as other revolutionaries of the 19th and early 20th centuries.

This main vision was for a human society, in which genuine egalitarian values would be fought for, poverty and capitalism abolished, and the working people would be decisive in helping to fashion such a new socialist society, which would usher in a period in which the possibility existed for an all-round social, political and cultural development of human beings.

Why Has Ecology Been Neglected By Revolutionaries?

It is true that many revolutionaries, in advancing a political viewpoint, often adopt a gospel-like quotation-mongering of Marx, Lenin, Engels, Mao Tse-tung (and even J.V. Stalin at a certain stage in history). Others quote Trotsky with equal fervor and religious-like dogmatism.

I contend that all strands of revolutionary thinking have been essentially economist in character, with a concentration on aiming to win control of the means of production, with insufficient consideration as to the ends of production, the social nature of labor, and almost total neglect of ecological consequences of the use of workers' labor, and of industrial development.

There has been a certain "plenitude" and "quantitative" mentality, with a minimum of revolutionary theory and practice in examining the finite nature of the planet and its resources, a balance of population as well as consideration of other species, and a respect for all aspects of ecology and the future of this small planet on which we all live.

In discussing ecology prior to the 24th Congress, some in the CPA advanced that "within the ecology movement there is still a great need to combat liberal and reactionary ideas, that rely upon such myths as overpopulation, absolute shortage of resources, the 'necessity' of maintaining underdeveloped countries in backwardness, etc." With them, I believe that the last "myth" is morally and politically wrong, but the previous statements fly in the face of reason and evidence. It is obvious that resources are finite; uncontrolled population is a tremendous problem which needs urgent and immediate attention. These problems are not mythical.

Too many revolutionaries speak of "conquering" nature, or of "using" nature, "harnessing" nature for man's benefit, arrogantly ignoring the need to harmonise with nature's delicate ecological balance. There has been a tendency to believe that a massive use of science and technology in a socialist framework would produce abundance for all, and solve all other problems.

Alas! How far from the truth – as cities, lakes, rivers, even seas and oceans have all been poisoned and pollution increases alarmingly.

Of course, science and technology both have a potentially positive role but only if such roles are seen in regard to the planet as a whole, for a global appreciation of the myriad problems.

Humanity is, for us, a very important part of the world, but it isn't the whole world. Other species and nature must be considered if humankind is to survive long in a civilized way, and the delicate balance between them must be maintained if humankind – possibly even organic life – is to survive at all.

The Scientific and Technological Revolution

This term was used over and over in the early post-war years, by communists, socialists and others, in expressing a hope that the profusion of goods which accompanied the idea of the "scientific and technological revolution" would dramatically alter the productive processes and humankind's control of nature's resources.

In the *Fundamentals of Marxism Leninism*, USSR scientist V.A. Obruchev in 1968 said:

> "It is necessary: to prolong man's life to 150-200 years on the average, to wipe out infectious diseases, to reduce non-infectious diseases, to conquer old age and fatigue, to learn to restore life in the case of untimely, accidental death; to place at the service of man all the forces of nature, the energy of the sun, the wind and subterranean heat, to apply atomic energy in industry, transport and construction, to learn how to store energy and transmit without wires to any point; to predict and render completely harmless natural calamities; floods, hurricanes, volcanic eruptions, earthquakes; to produce in factories all substances unknown in nature: harder than diamonds, more heat resistant than fire-bricks, more refractory than tungsten and osmium, more flexible than silk and more elastic than rubber. To evoke new breeds of animals, and varieties of plants that grow more swiftly and yield more meat, milk, wool, grain, fibres and wood for man's needs; to reduce, adapt for the needs of life and conquer uncompromising area, marshes, mountains, deserts, taiga, tundra and perhaps even the sea's bottom; to learn to control the weather, regulate the wind, and heat, just as rivers are regulated now; to shift clouds at will, to arrange for rain or clear weather, snow or hot weather," etc.

Again, in the mid-sixties *Civilisation at the Crossroads* opened up the many perspectives of an industrialised society, and the potential for an industrialised society under socialism. Rereading this book, one is struck again with the scant attention given to ecological problems. Again, there is a preoccupation with science, technology and economic growth.

The Widening Gap

It is only in the last decade that there has been a growing popular awareness of the serious ecological crisis and the need for a basic energy and resources policy on a global basis.

When one considers that China, in feeding and clothing close to 1,000 million, uses less total energy than the USA uses in

Reprinted from *Australian Left Review*

air-conditioning alone, it gives some indication of the frightful imbalance in energy and resources usage.

The disparity in the consumption of food is similarly dramatic. For example, the USA and France together consume more food than China and India combined. And when one also considers the extent of poverty existing within the advanced industrialised countries, it makes the gap even wider in human reality.

250 million "westerners" consume the same quantity of protein as 1,500 million people in the Third World. Almost two-thirds of the world's population is malnourished, and in the Third World, the distribution of income is even more polarised than in the advanced industrialised societies, as the rich elites tend to orient their consumption patterns to those of their counterparts in the advanced capitalist countries, consuming more and more foreign goods and requiring more and more expertise and technology.

Overall, the trade imbalance and financial inequalities between the two sectors — the advanced and Third World — and between rich and poor in the Third World is growing. Capitalist development inevitably produces development at one pole and underdevelopment at the other. The advanced capitalist countries and the underdeveloped countries are not separate worlds: they are the top and bottom sides of one and the same world.

The Role of The Multinationals

Jon Tinker, in the *New Scientist*, summarises the role of large companies in the mechanism that leads to the plight of the Third World countries in the following way:

> "Since 1950 the trans-national corporations have steadily grown at a rate of two to three times faster than the most advanced industrial nations, at which rate they will, by the turn of the century, control over half the world's goods and services. In particular, trans-national corporations dominate the world commodity markets, controlling both the extraction of raw materials and the end products made by them.
>
> "Typically, a raw material is extracted by a trans-national in a developing country, and sold to the same trans-national in an industrialised country, where it is processed, manufactured and distributed.
>
> "The highest grade ores have largely been extracted leaving the Third World without the cheap raw materials which historically provided economic take-off for Europe and North America."

So the use of the power of the multinationals directly aggravates the worsening position of the Third World in just about every way.

Is a New Ethic Possible?

It is possible only if a majority of people realise how late in the day it is and that humankind's survival is on the agenda, that even the most sophisticated form of capitalism is incapable of effecting a sufficiently required change because of its intrinsic "economic growth" and "predatory expansionism" character.

Socialism Must Be Different — An Ecological Socialism!

Existing socialist societies and socialist ideologies generally must alter their present priorities, and more particularly, their values, if a sane, socialist, humane, ecological world is to come into being.

I contend that the "developing countries" are not "developing" and cannot do so in the present world system. Furthermore, the "developed countries" are on a suicide course that will, at least, destroy their way of life, and quite probably the whole of civilisation within the course of the next few decades — if there is not a fundamental change away from the destructive, acquisitive, consumerist societies which control the world and its resources now.

Although we may repeat that the present world crisis has been caused by capitalism (so far it has been the only significant influence) there is not much evidence to show that industrial socialism has contributed towards a suitable ecological solution.

Why Are So Few Socialists Ecologically Aware?

Did not Marx and the other socialist theoreticians say that poverty and scarcity were managed by capitalism? That the communist society would be one of abundance? Did they not attack Malthus and neo-Malthusians for suggesting that there was a limit on growth of population apart from those produced by capitalist exploitation. At that time maybe it was understandable. The total population of the world in Marx's day was the same as China's present day population. Three-quarters of the world was still almost virgin. North America, Australia and Siberia were only just opened up. Africa was still an unknown continent. Marx put his finger on the immediate restrictions: limitations caused by resource shortage and the finite extent of land, central to Malthus' theory, were problems for the distant future. In particular, it is only in the last 30 years that

In 1972 the South Sydney Residents' Action Group polled the people in Waterloo and found them opposed to low-income housing redevelopment. The Housing Commission proceeded anyway, until stopped by a Builders' Labourers' Green Ban.

it has become possible to gauge the dimensions of the resources problem, as is now generally known and accepted.

Marx, however, was not completely oblivious of the restrictions of nature:

> "The first premise of all human history, of course, is the existence of living human individuals. The first fact to be established then, is the physical organisation of these individuals and their consequent relationship to the rest of the nature."

Further he stated:

> "Communism as completed naturalism, is humanism, and, as completed humanism, naturalism. It is the genuine solution of the antagonism between man and nature and between man and man."

It is quite understandable that Marx was less concerned with the relations between man and nature than those between man and man. This emphasis was inherent in the production of works that remain an inspiration over a century later.

But the scientific character of the marxist method has, too often, been breached by later socialists. Marx once said (in exasperation) that he was not a marxist, a remark he would wish to repeat many times if he were alive today. It can hardly be doubted for example, that he would revise his opinions about some aspects of Malthus' theory.

Although he might not reverse the priority of man-man over man-nature relations, he would certainly pay much more attention to the latter, and to their integration into the whole theory of his idea of scientific socialism. Such must be one of the major tasks of his followers in spirit rather than in the letter.

Finite World? - Yes. Infinite World? - No.

In 1970, Paul Ehrlich brilliantly commented —

> "To raise all the 3.6 billion people of the world to the American 'standard of living' would require . . . 75 times as much iron as is now extracted annually, 100 times as much copper, 200 times as much lead, 75 times as much zinc and 250 times as much tin . . . "

Except for iron, such resources are just not available, and even if they were, world consumption of these and other metals would be 6-8 times the present value, so that the primary consumption would be enormous even if re-cycling occurred at an unrealistically high efficiency of 90 per cent. A further factor would, of course, need to be included to allow for the doubling of the world population, and of rich world per capita GNP by the year 2000, but we have already listed quite enough impossibilities to be going along with.

What Chances — Global Harmony?

The impossibility of a "USA type industrialised world" is abundantly clear. Nor, of course, is it desirable. However, many politicians of the Third World continue to try to follow this industrial "dream" to the detriment of future generations.

There must be a redistribution of real income — towards a national, then global equality.

Surely a prerequisite for global harmony must be abandonment of a false standard of living premise in favor of one of "quality of living." We must move towards production for real needs, for genuine social and human needs and away from the production for profit, with the subsequent terrible desecration of the natural, rural and built environments, and the accumulation by capitalists (and workers apeing capitalists) of consumerist commodities, many of which are completely unnecessary, purchased by people saturated by the incessant brainwashing of the vast, powerful advertising lobby which creates false wants, false values, false ethics, with all their inbuilt obsolescence and ecological destructiveness.

Against "Over" - Industrialisation

The Third World countries should examine the danger signals from the most advanced "western" countries. Dr. Hammond of the U.S. Cancer Society points out:

> "Our world is changing rapidly, and the environment in which we live has altered to an extraordinary extent. The air we breathe contains gases and articles that never before entered the human lung. We ingest, inhale, absorb an ever increasing number of synthetic materials. Cancers which we are seeing now had their origin 15 to 30 years ago, and cancer agents being introduced into our environment now will not show their effect for another one or two decades. . . . There has been, and continues to be, no pre-testing materials for cancer or other serious diseases. Examination is for serviceability, saleability, utility. Whether cancer will result is hardly considered."

The Social Consequences of Labor - Decisive

If industrial workers and their organisations can break with economism, and commence to question which commodities, goods and services should be made in the interests of society generally — yes, there is a future — but only if the progressive section of the populations of the advanced industrialised countries, with a socialist thrust, can give assistance to the Third World countries, not to mimic and blindly follow the present advanced industrialised countries, but instead to create a climate in which these countries can be truly independent to develop their economies in the manner in which each country wishes, but noting and avoiding the errors of the advanced industrialised countries and their tragic ecological record.

Workers And Environmental Responsibility

The myth that the workers "have no right in" or "are not interested in" environmental issues is dangerous and wrong. In fact, the working class is the most affected section of the population when the environment is ravaged. Who lives in the most polluted areas of the world's huge cities? Who bears the heaviest noise levels? Who lives in the least congenial areas, etc.? The less endowed, of course.

Therefore, it is obvious that the workers' organisations must be concerned with more than the workplace, but must consider and link the transport, the home, the whole network of community and social pressures, all of which impinge on the total environmental life of workers and their families.

Time Is Running Out - Concerned People Must Act

If the Third World's people can learn from the errors of the industrial excesses, of an ecological destruction of the "advanced" countries, if there can be aroused a greater ecological consciousness amongst workers, in particular, and people generally, in the industrialised world, there may be some chance of avoiding the impending catastrophe.

Greed, predatory aggressiveness for personal and corporate profit and the ever-present possibility of nuclear war must be arrested and defeated.

A new ethic, with global concern and consideration for all human beings, other species and the whole environment could mean that humankind's entry into, and beyond, the 21st century could be assured.

A socialism, with a human, social and ecological heart, as well as a human face, is required. The history of the working people of the world, and of the whole "left" oriented organisations as regards ecology, leaves a lot to be desired.

Possibly the present gravity of the ecological crisis is the reason that workers and their organizations are beginning to move. To the whole left, to socialists, to communists, in fact to all people, the world's survival is now on the political agenda and will remain there as long as humankind remains on our planet. ■

Understanding Whole Systems

Grand Design

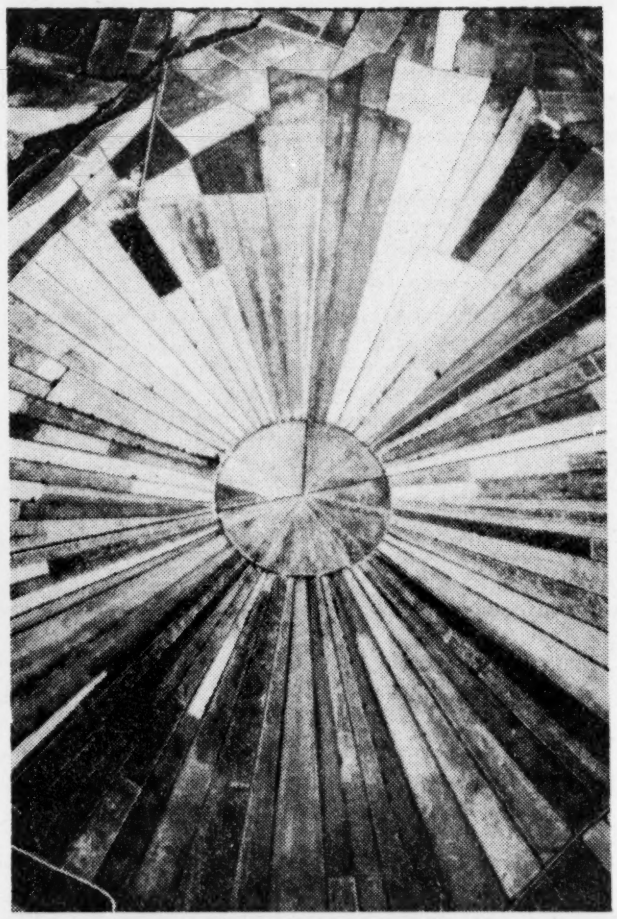
First of all, it surpasses E.A. Gutkind's long-out-of-print classic **Our World From the Air** *– that makes it the best book of aerial photographs ever (200 photos – half are in color). What is unique is the captions – Gerster knows what he is floating over, or he studies it until he does. He knows the history of places, and why the farmers do odd things, and what the tribe is after, and how to keep sand dunes from covering the oasis. The book is a tour-de-force of form and content.*

The range is so world-wide and culturally rich that no reader-flier can escape wanting to try things differently. That's the yield of perspective. I've seen no other book – not even the space satellite ones – with perspective like this.

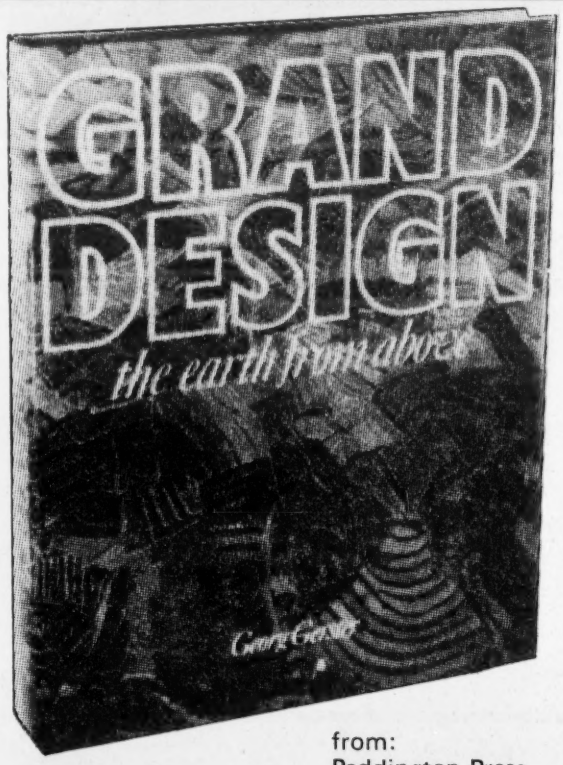
Gerster's message comes across: if your place is beautiful from the air, it's beautiful to live in. If not, not.

–SB

[Suggested by Wilson Clark and Allison Giballe]



The star of Enserune in the Departement of Herault, France. In 1247 three feudal lords from the region of Montady and the notary of Beziers obtained permission from the archbishop in Narbonne – he was responsible for water resources – to drain the Etang de Montady and to make arable land out of it. The rays of the pattern which resulted from the reclamation work are drainage ditches. The optical and technical aspects of the pattern thus contradict each other: the star does not radiate, but collects. The drainage waters flow down the gentle gradient of the ditches into a collecting sump at the center; from there, a canal that cuts through the hill of Enserune in an underground conduit leads the water into a neighboring pool. Bylaws outlining the rights and duties of the owners of the reclaimed land have remained absolutely unchanged since the thirteenth century. The *Syndicat Agricole* of Montady/Enserune is the oldest in France and one of the oldest in Europe. The whole reclaimed area is slightly oval, a consequence of the terrain. The individual sectors of the circle take this into account, becoming wider or narrower, but all the plots are of the same size. For centuries the more than five hundred hectares of the area were reserved almost exclusively for vine cultivation. Since 1956, however, when a sudden onset of cold following an Indian summer caused severe damage, the farmers have tried diversification. Fruit tree, tomatoes, maize, sorgo and lucerne grow on the sectors today.



Grand Design
(The Earth From Above)
Georg Gerster
1976; 312 pp.
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Three-layered protons . . . what will She think of next?

–Joel Davis

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CLOSED ECOLOGY TESTED FOR SPACE

Permanent colonies in space, earth-orbiting stations and manned flights to other planets all are possible applications for life-support systems that function as closed ecologies, providing air, water and food through a variety of mutually dependent biological systems. A recent Soviet test sustained three people for six months in a system that provided oxygen by recovery from atmospheric carbon dioxide, water from "photosynthetic regenerative process" and included the production of "a certain amount of grain and vegetables." The result, according to I.I. Gitelson and colleagues from the Soviet Academy of Sciences, "established beyond question that a small, steadily operating, essentially closed system of 'substance-turnover' involving man is quite feasible."

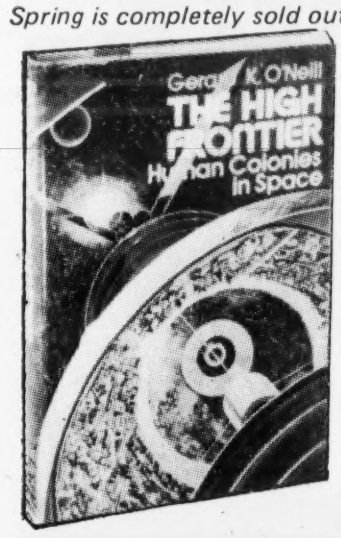
•

UNDER THE INFLUENCE OF MARIJUANA

A simple chemical test for marijuana intoxication may be just around the corner. In the January **Analytical Chemistry** Joe Vinson, Dinu Patel and Arun Patel report success in detecting tetrahydrocannabinol (THC) in blood samples of volunteer smokers. The researchers are currently adapting this technique to saliva samples.

The High Frontier

Physicist Gerard O'Neill's steadily-evolving scheme of space colonies in Earth orbit has roused delicious debate. (The CQ issue of pro and con commentary on Space Colonies last Spring is completely sold out.) Love it or hate it, I hope you will consider the idea straight from O'Neill and not processed through rabid proponents and opponents. O'Neill is ingenious and likeable. So is his book. —SB



The High Frontier
(Human Colonies in Space)
1977; 288 pp.
$8.95 postpaid
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West Caldwell, NJ 07006
or Whole Earth

I confess to a humanitarian bias in the design that I suggest. Technological revolution is a powerful force for social change, and in choosing among several technical possibilities I have been biased strongly toward those which seem to offer the greatest possibilities for enlarging human options, and for breaking through repressions which might otherwise be unbreakable. Yet I offer no Utopia; man changes only on a time scale of millenia, and he has always within him the capacity for evil as well as for good. Material well-being and freedom of choice do not guarantee happiness, and for some people choice can be threatening, even frightening. Though I acknowledge that my study will be of the physical environment, and only indirectly with the psychological, I will still try to describe an environment which combines with its efficiencies and its practicality opportunities for increasing the options, the pleasures, and the freedoms of individual human beings.

I have argued that there is only one way in which we can develop truly high-growth-rate industry, able to continue the course of its development for a very long time without environmental damage: to combine unlimited solar power, the virtually unlimited resources of the Moon and the asteroid belt, and locations near Earth but not on a planetary surface.

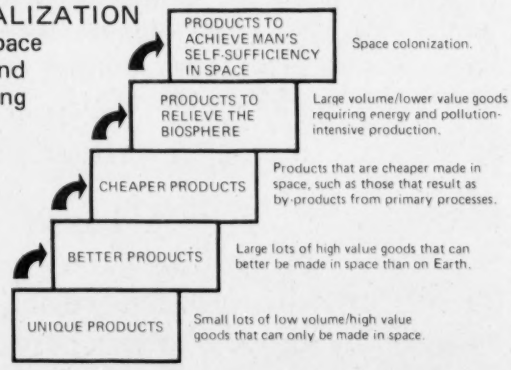
Notes from L5

The 3rd Princeton/AIAA Conference on Space Manufacturing Facilities will take place May 10 - 13, 1977 at Princeton. For information contact: Dr. Gerard K. O'Neill, Dept. of Physics, Jadwin Hall, Room 302, Princeton Univ., Princeton NJ 08540.

Following is a new diagram that NASA's Jesco Von Puttkamer uses to show the likely increments of the USE of Space. It's the best new favorable argument I've seen since the subject of Space Colonies came up, because it counters the complaints about "$100 billion suddenly thrown away into Space — for what?"

These and other centifugal items may be found in L5 News (monthly, $20/yr; $10 for students) from: L5 Society, 1620 N. Park Ave., Tuscon, AZ 85719. —SB

EVOLUTION OF SPACE INDUSTRIALIZATION
Example: Space Processing and Manufacturing of Goods



Space agriculture retort

I enjoyed the Fall '76 CQ. I notice that Holt and Heppenheimer are at it again. At least Holt is beginning to develop a degree of humility about his expertise in the fields of physics and electrical engineering. (By the way, O'Neill's group is studying linear synchronous, not linear induction motors for the transport linear accelerator.) Planetary scientist Heppenheimer, however, is more certain than ever that he knows all about agriculture in space!

As the unwitting soul who turned Tom Heppenheimer on to the references he used for his chapter on space farming, it looks like it's my time to speak up. It may be true that a closed cycle agriculture could be set up using non-biological techniques to recycle liquid, solid and gaseous wastes. But I have not been able to find any reports of such a system having been put into operation for an extended period. Whether or not such a system will work is open to speculation. However, I also object to those who state *a priori* that living ecosystems could not possibly be held together with plumbing and chemicals. Why can't the debaters on both sides just admit to not knowing (yet)?

The University of Arizona has an interdisciplinary team, under under the direction of systems engineering professor Wayne Wymore which has tackled the "space farm" problem. In Wayne's eyes, the worst possible sin is to rush on to solutions before you know what the problems are. Our team is considering problems such as: what happens when there is a fire in the colony (the smoke won't just "go away"!) If someone dumps a lead battery in the trash, will people be eating it in the form of spinach 3 months later? What about the effects of spray deodorants? (The Navy banned aerosol cans from their nuclear submarines — which are semi-closed environments — long before anyone else noticed they were bad news!

Of course, no amount of library research and mouth flapping and typewriter key pounding will uncover all problems.

NASA's Phillip Quatrone, Chief of the Environmental Control Branch, has suggested that we let the astronauts of the mid-eighties grow vegetables in their space base. Those first lettuce and tomato plants can tell us how well they do or don't like their habitat far more eloquently than any assemblage of ecologists or chemical engineers.

After all, life didn't leap from the seas and blanket the land overnight. It was a gradual process. I imagine the "greening" of space will be similar, with the forests and fields of the O'Neill style settlements evolving from the house plants and vegetable gardens of the early space bases.

Now, to get back to the subject of Holt: I was not entirely surprised by his belief that O'Neill thinks space colonies will solve all problems. It reminds me of a conference this summer where O'Neill was being grilled by a panel of professors and NASA officials. One professor smugly announced he was going to be the bad guy and shoot O'Neill down. He read aloud an article he said was written by O'Neill. The article claimed that it had been proven that space colonies would solve the energy crisis, bring world peace, cure dandruff, etc. Finishing, he then demanded of O'Neill how he could have written such an atrocity.

"But I didn't write that article," Gerry replied mildly.

Gerard O'Neill has never claimed anything more outrageous than that we ought to consider whether space colonies might solve some of our problems. In spite of this rather unmessiah-like stance, there are those who believe Gerry is greater than Jesus and Moses combined and are desperate to touch the hem of his robe. When O'Neill catches them at it he banishes them to Siberia. . . .

—Carolyn Meinel Henson
L5 Society
Tucson, Arizona

Snake

By ANNE HERBERT

G. Russ Youngreen

In the beginning God didn't make just one or two people, he made a bunch of us. Because he wanted us to have a lot of fun and he said you can't really have fun unless there's a whole gang of you. So he put us all in this sort of playground park place called Eden and told us to enjoy.

At first we did have fun just like he expected. We played all the time. We rolled down the hills, waded in the streams, climbed the trees, swung on the vines, ran in the meadows, frolicked in the woods, hid in the forest, and acted silly. We laughed a lot.

Then one day this snake told us that we weren't having real fun because we weren't keeping score. Back then, we didn't know what score was. When he explained it, we still couldn't see the fun. But he said that we should give an apple to the person who was best at playing and we'd never know who was best unless we kept score. We could all see the fun of that. We were all sure we were best.

It was different after that. We yelled a lot. We had to make up new scoring rules for most of the games we played. Other games, like frolicking, we stopped playing because they were too hard to score. By the time God found out about our new fun, we were spending about forty-five minutes a day in actual playing and the rest of the time working out the score. God was wroth about that – very, very wroth. He said we couldn't use his garden anymore because we weren't having any fun. We said we were having lots of fun and we were. He shouldn't have got upset just because it wasn't exactly the kind of fun he had in mind.

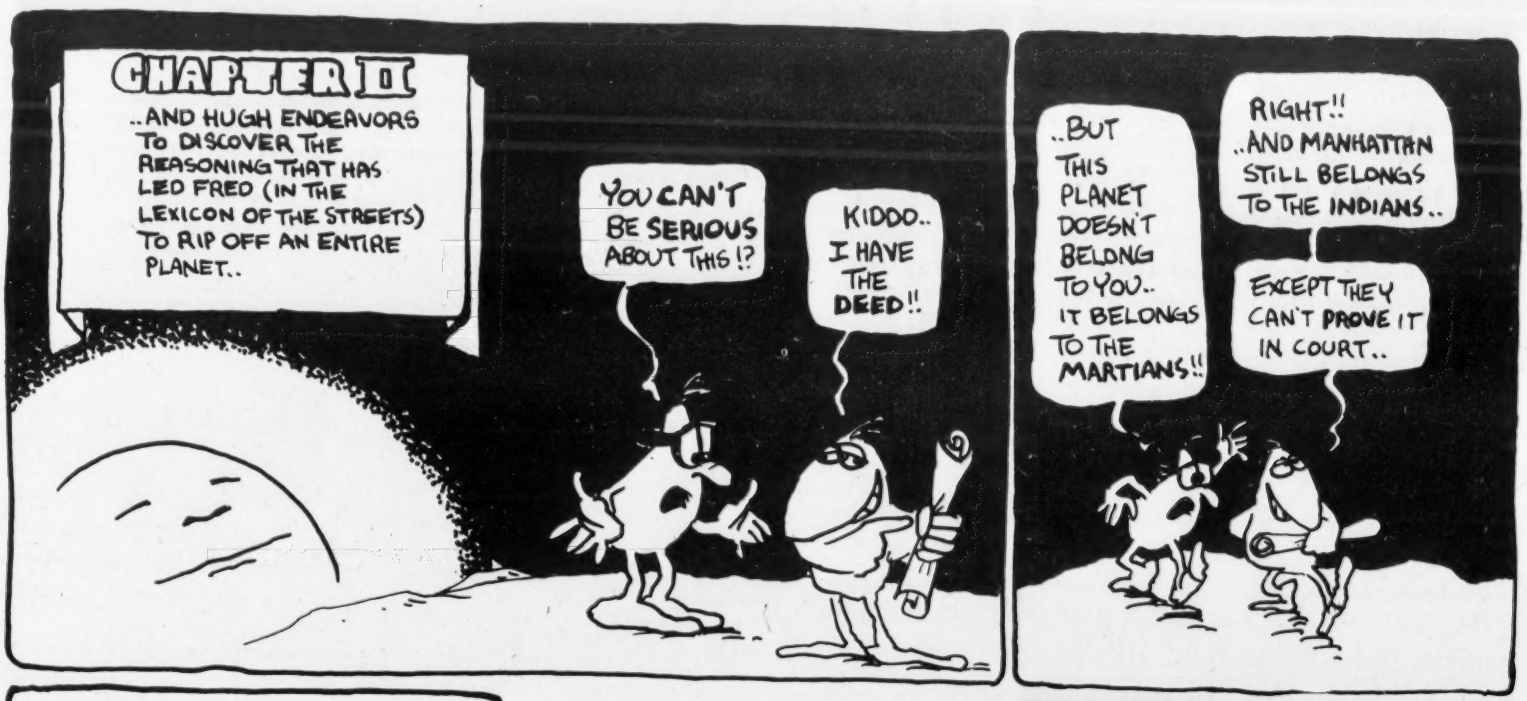
He wouldn't listen. He kicked us out and said we couldn't come back until we stopped keeping score. To rub it in (to get our attention, he said), he told us we were all going to die anyway and our scores wouldn't mean anything.

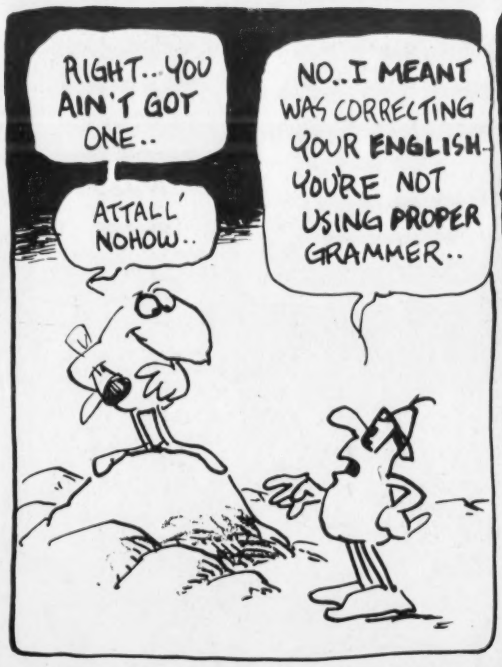
He was wrong. My cumulative all-game score is now 16,548 and that means a lot to me. If I can raise it to 20,000 before I die I'll know I've accomplished something. Even if I can't my life has a great deal of meaning because I've taught my children to score high and they'll all be able to reach 20,000 or even 30,000 I know.

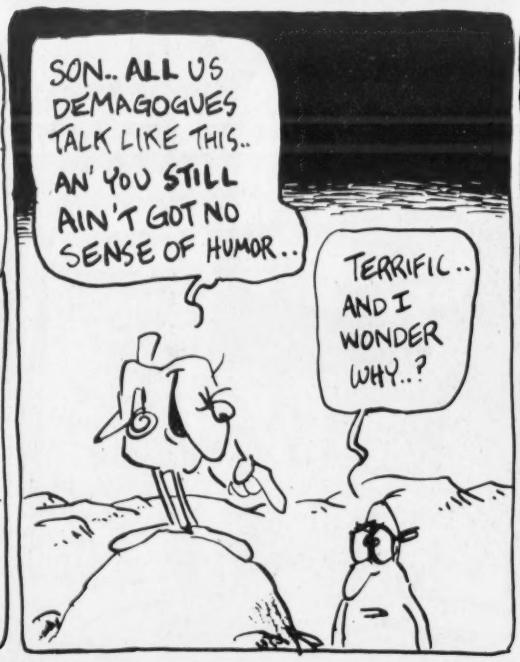
Really, it was life in Eden that didn't mean anything. Fun is great in its place, but without scoring there's no reason for it. God has a very superficial view of life and I'm glad my children are being raised away from his influence. We were lucky to get out. We're all very grateful to the snake. ▪

Odd Bodkins *by Dan O'Neill*

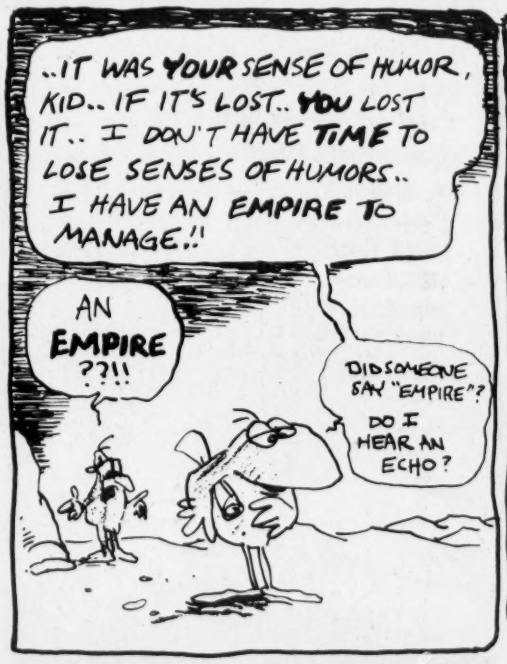
Continuing the adventure of Fred and Hugh on MARS, which Fred has just purchased.




RIGHT.. YOU AIN'T GOT ONE..
ATTALL' NOHOW..
NO.. I MEANT WAS CORRECTING YOUR ENGLISH YOU'RE NOT USING PROPER GRAMMER..


SON.. ALL US DEMAGOGUES TALK LIKE THIS.. AN' YOU STILL AIN'T GOT NO SENSE OF HUMOR..
TERRIFIC.. AND I WONDER WHY..?

.. ALL YOU LIBERALS IS THE SAME, SON.. UP TIGHT IN THE FACE OF REALITY..
IT WAS A RHETORICAL QUESTION, FRED.. I KNOW I'VE LOST MY SENSE OF HUMOR.. AND YOU ARE THE REASON WHY!!


..IT WAS YOUR SENSE OF HUMOR, KID.. IF IT'S LOST.. YOU LOST IT.. I DON'T HAVE TIME TO LOSE SENSES OF HUMORS.. I HAVE AN EMPIRE TO MANAGE.!!
AN EMPIRE ??!!
DID SOMEONE SAY "EMPIRE"? DO I HEAR AN ECHO?

DON'TCHA SEE, KID.. WE'VE BEEN FIGHTIN' 'EM SO LONG, WE ARE THEM!! YOU ARE WHAT YOU EAT? YOU ARE WHAT YOU FIGHT!! IT'S TOO FUNNY!! THIS IS OUR EMPIRE! WE'RE IN THE BALL GAME!!
BALL GAME?

AND I'M GONNA SOCK IT TO 'EM!!
YOU ARE WHAT YOU FIGHT?

FRED!! LISTEN! I'M YOUR BEST FRIEND! I'D LIKE TO UNDERSTAND YOU!! WHY IS THIS HAPPENING!!? I DON'T UNDERSTAND YOU ANYMORE!!
THAT'S THE NICEST THING YOU'VE EVER SAID TO ME!
LET'S GO OVER THIS WAY..

..I MEAN IT.. UNDERSTANDING BREEDS CONTEMPT!! I CAN'T HARDLY BEAR IT WHEN YOU UNDERSTAND ME..
REALLY ??

BE LOGICAL! WHEN YOU UNDERSTAND ME, I CAN FEEL IT! YOU DON'T EVEN HAVE TO TELL ME! .. YOU ALWAYS DO TELL ME.. BUT IT ISN'T NECESSARY.. I KNOW WHEN I'M BEING UNDERSTOOD!
YEAH?
FOLLOW?
I THINK SO?

[more →]

NOW.. SECONDLY.. I KNOW THAT IF YOU **UNDERSTAND** ME.. THEN YOU HAVE **FORGIVEN** ME FOR WHATEVER SMALL PERSONALITY DEFECT YOU OBSERVE IN ME - YOU HAVE **FORGIVEN** ME IN ORDER TO **ACCEPT** ME ..

YEAH.. THAT'S SO.. SO?

SO.. YOU DIDN'T **ASK ME** IF I WANTED TO BE FORGIVEN.. WHAP! YOU JUST UP AND FORGAVE ME!!

I SHOULD **ASK** BEFORE I FORGIVE SOMEONE IF THEY WANT.. OR WOULD THEY MIND IF I FORGIVE THEM??

IT'S ONLY **POLITE** TO ASK!! WHERE ARE YOUR **MANNERS**!? WHO ARE YOU.. YEAH!! BESIDES THAT!! WHO THE HELL ARE YOU TO **FORGIVE** ME!!

I THOUGHT I WAS DOING THE RIGHT THING..

..YOU **THOUGHT** YOU WERE DOING THE **RIGHT** THING!! I FALL **ASLEEP** LISTENING TO YOU THINK!!

YOU NEEDN'T GET **HOSTILE**..

HOSTILE!? YOU **BET** I'M **HOSTILE**!! UNTIL YOU **FORGAVE ME** I DIDN'T **KNOW** I WAS **GUILTY**!! **GUILTY** MEANS I FEEL A SENSE OF **SIN**!! CHEAPER! DIMINISHED!!

THANKS A **LOT**!!

I'M **SORRY**...

YOU'RE **SORRY**? WHAT **AM I** SUPPOSED TO DO? **FORGIVE** YOU? **TWO** WRONGS MAKE A **RIGHT**!! BULLSHIT!! I STOP RIGHT HERE.. IF IT MAKES YOU HAPPY MAKING FOLKS GUILTY.. BE MY GUEST..

YOU'RE NOT ANGRY?

BEING ANGRY JUST PLAYS HOB WITH MY ACCEPTANCE OF YOU.. MESSES IT ALL UP.. I ACCEPT YOU..

WITHOUT GIVING YOU THE DISSERVICE OF GUILT.. WHY CAN'T YOU DO THE SAME FOR ME..?

WHY SHOULD LITTLE PERSONALITY DEFECTS INTURRUPT OUR FRIENDSHIP..

YOU MIGHT BE RIGHT..

OF COURSE I'M RIGHT!! JUST THINK HOW MUCH BETTER WE WILL FEEL IF WE DON'T WASTE ENERGY TRYING TO UNDERSTAND EACH OTHER...
BUT WHAT WILL WE DO WITH ALL THAT ENERGY?
WE USE THAT ENERGY ON SOMETHING IMPORTANT!! WE FOCUS ON GETTING ALONG WITH EACH OTHER..
..AND LET THE LITTLE PERSONALITY DEFECTS SLIDE, RIGHT??
LITTLE PERSONALITY DEFECTS LIKE RIPPING OFF ONE OF THE PLANETS IN OUR STAR SYSTEM.. RIGHT?
HOPE LESS
IT DOESN'T SEEM RIGHT, FRED?
ONE QUESTION, MR. GOODBAR ?
SURE..
I HAVE A TERRIBLE HEADACHE FROM ALL THIS MORALITY.. BUT I WOULD LIKE TO KNOW IF YOU WOULD FEEL BETTER IF YOU KNEW THAT I DIDN'T INTEND TO RIP OFF THIS PLANET..??
REALLY ??
YOU MEAN IT WASN'T PREMEDITATED!!? YOU WERE JUST OVERCOME BY TEMPTATION.? A SIMPLE LETDOWN OF YOUR GUARD..?
THAT'S RIGHT.. A SPUR OF THE MOMENT CRIME OF PASSION..
SO TO SPEAK...
IF I WAS GOING TO STEAL A PLANET, THIS ONE WOULDN'T BE MY CHOICE.. ROUGH AIR SITUATION.. RAW MATERIALS, YES.. BUT I HAVE TO INDUSTRAILIZE THE PLACE.. ALL IN ALL I CAN THINK OF A DOZEN PLANETS..
.. EASILY A DOZEN PLANETS I'D RATHER STEAL.. BUT!! THIS WAS THE CLOSEST!! WHAT AM I SUPPOSED TO DO? WAIT FOR NASA TO FIND ME ANOTHER ONE ? HAH! FAT CHANCE!! ANOTHER THING.. NOW.. AT THIS MOMENT REAL ESTATE HAS VALUE !!
SUPPOSE BACK HOME THEY HAVE AN ATOMIC WAR..? HUH?
ONE WAR LIKE THAT! BANG! THE CROWD THINS! VERY FEW PEOPLE LEFT.. AND ALL OF THEM HAVE LOTS OF REAL ESTATE AND MY HOLDINGS ARE WORTHLESS..
I THINK HE'S PUTTING ME ON AGAIN..
I'M BROKE! BANG!! IT'S SCARY!!
IS SARCASM OUR ONLY WAY OUT OF THESE BOX CANYONS?
O'NEILL

Sowing grain. Maine, 1885. EMMA COLEMAN

Exploitation & Nurture

The terms describe a division not only between persons but within persons.

BY WENDELL BERRY

Photographs from *The American Farm: A Photographic History*

WE CAN UNDERSTAND a great deal of our history – from Cortez' destruction of Tenochtitlan in 1521 to the bulldozer attack on the coalfields four and a half centuries later – by thinking of ourselves as divided into conquerors and victims. In order to understand our own time and predicament, and the work that is to be done, we would do well to shift the terms slightly and say that we are divided between exploitation and nurture. The first set of terms is too simple for the purpose, because it proposed, in any given situation, to divide people into two mutually exclusive groups; it becomes complicated only when we are dealing with situations in succession – as when a colonist who persecuted the Indians then resisted persecution by the crown. The terms exploitation and nurture, on the other hand, describe a division not only between persons but also within persons. We are all to some extent the products of an exploitive society, and it would be foolish and self-defeating to pretend that we do not bear its stamp.

Let me outline as briefly as I can what seem to me the characteristics of these opposite kinds of mind. I conceive a strip miner to be a model exploiter, and as a model nurturer I take the old-fashioned idea or ideal of a farmer. The exploiter is a specialist, an expert; the nurturer is not. The standard of the exploiter is efficiency; the standard of the nurturer is care. The exploiter's goal is money, profit; the nurturer's goal is health – his land's health, his own, his family's, his community's, his country's. Whereas the exploiter asks of a piece of land only how much it can be made to produce, and how quickly it can be made to produce it, the nurturer asks a question that is much more complex and difficult: What is its carrying capacity? (That is: how much can be taken from it without diminishing it? What can it produce dependably for an indefinite time?) The exploiter wishes to earn as much as possible by as little work as possible; the nurturer expects, certainly, to have a decent living from his work, but his characteristic wish is to work as well as possible. The competence of the exploiter is in organization; that of the nurturer is in order – a human order, that is, that accommodates itself both to other order and to mystery. The exploiter typically serves an institution or organization; the nurturer serves land, household, community, place. The exploiter thinks in terms of numbers, quantities, "hard facts"; the nurturer in terms of character, condition, quality, kind.

* * *

The first principle of the exploitive mind is to divide and conquer. And there has surely never been a people more ominously and painfully divided than we are – both against each other and within ourselves. Once the revolution of exploitation is under way, statesmanship and craftsmanship are gradually replaced by salesmanship. The craft of persuading people to buy what they do not need and do not want for more than it is worth. Its stock in trade in politics is to sell despotism and avarice as freedom and democracy. In business it sells sham and frustration as luxury and satisfaction. The "constantly expanding market" first opened in the New World by the fur traders is still expanding – no longer so much by expansions of territory or population, but by the calculated out-dating, out-moding, and flimsification

It's no cinch to skim cream from cream. This is an anthology of excerpts from Wendell Berry's forthcoming book **The Unsettling of America** *(available probably in June, probably for $8.95, from Sierra Club Books, Box 7959, Rincon Annex, San Francisco, CA 94120). Wendell is a small-farmer in Kentucky, and the author of* **Farming – A Handbook** *(poems),* **The Long-Legged House**, *and* **The Memory of Old Jack.**

The portfolio of photographs that accompanies this article is drawn from the marvelous exhibit and book, **The American Farm: A Photographic History** *by Maisie and Richard Conrat (California Historical Society and Houghton Mifflin Company – $9.95 from Houghton Mifflin Company, Wayside Road, Burlington, MA 01803.) For information on the travelling exhibition, contact the Exhibitions Director, CHS, 2090 Jackson St., San Francisco, CA 94109. I'm grateful to Jim Holliday for enthusiastic help in getting this material to us.*

–SB

of goods, and by the hysterical self-dissatisfaction of consumers that is indigenous to our exploitive society.

* * *

What is the cause of these divisions? There are no doubt many causes, complex both in themselves and in their interaction. But pertinent to them all, I think, is our attitude toward work. The growth of the exploiters' revolution on this continent has been accompanied by the growth of the idea that work is beneath human dignity, particularly any form of hand work. We have made it our overriding ambition to escape work, and as a consequence have debased work until it is only fit to escape from. We have debased the products of work, and have been, in turn, debased by them. Out of this contempt for work arose the idea of a nigger: at first some body, and later some thing, that would relieve us of the burden of work. If we began by making niggers of people, we have ended by making a nigger of the world. We have taken the irreplaceable energies and materials of the world and turned them into jimcrack "labor-saving devices." We have made of the rivers and oceans and even the winds niggers to carry away our refuse that we think we are too good to dispose of decently ourselves. And in doing this to the world that is our common heritage and bond, we have returned to making niggers of people: we have become each other's niggers.

But is work something that we have a right to escape? And can we escape it with impunity? We are probably the first entire people ever to think so. All the ancient wisdom that has come down to us counsels otherwise. It tells us that work is necessary to us, as much a part of our condition as mortality; that good work is our salvation and our joy; that shoddy or dishonest or self-serving work is our curse and our doom. We have tried to escape the sweat and sorrow promised in Genesis – only to find that, in order to do so, we must forswear love and excellence, health and joy.

Thus we can see growing out of our history a condition that is physically dangerous, morally repugnant, ugly. Contrary to the blandishments of the salesmen, it is not particularly comfortable or happy. It is not even affluent in any meaningful sense, because its abundance is dependent on sources that are being rapidly exhausted by its methods. Only to see these things is to come up against the question: Then what is desirable?

One possibility is just to tag along with the fantasists in government and industry, who would have us believe that we can pursue our ideals of affluence, comfort, mobility, and leisure indefinitely. This curious faith is predicated on the notion that we will soon develop unlimited new sources of energy: domestic oil fields, shale oil, gasified coal, nuclear energy, solar energy, and so on. This is fantastical because the basic cause of the energy crisis is not scarcity; it is moral ignorance and weakness of character. We don't know how to use energy, or what to use it for. And we cannot restrain ourselves. Our time is characterized as much by the abuse and waste of human energy as it is by the abuse and waste of fossil fuel energy. Nuclear power is presumably now going to be used benignly by the same mentality that has egregiously devalued and misapplied man- and womanpower. If we had an unlimited supply of solar or wind power, we would use that destructively too, for the same reasons.

Erosion. Georgia, 1941. JACK DELANO

Perhaps all of those sources of energy are going to be developed. Perhaps all of them can sooner or later be developed without threatening our survival. But not all of them together can guarantee our survival, and they cannot define what is desirable. We will not find those answers in Washington D.C. or in the laboratories of oil companies. In order to find them, we will have to look closer to ourselves.

I believe that they are to be found in our history: in its until now subordinate tendency of settlement, of domestic permanence. This was the ambition of

thousands of immigrants; it is formulated eloquently in some of the letters of Thomas Jefferson; it was the dream of liberated slaves; it was written into law in the Homestead Act of 1862. There are few of us whose families have not at some time been moved to see its vision and to attempt to enact its possibility. I am talking about the idea that as many as possible should share in the ownership of the land, and thus be bound to it by economic interest, by the investment of love and work, by family loyalty, by memory and tradition. How much land this should be is a question, and it varies with geography. The Homestead Act said 160 acres. The freedmen of the 1860's hoped for forty. We know that, particularly in other countries, families have lived decently on far fewer acres than that.

This old idea is still full of promise. It is potent with healing and with health. It has the power to turn each person away from the bigtime promising and planning of the government, to confront in himself, in the immediacy of his own circumstances and whereabouts, the question of what methods and ways are best. It proposes an economy of necessities, rather than an economy based upon anxiety, fantasy, luxury, and idle wishing. It proposes the independent, free-standing citizenry that Jefferson thought to be the surest safeguard of democratic liberty. And perhaps most important of all, it proposes an agriculture based upon intensive work, local energies, care, and intentional permanence – that is, to state the matter from a consumer's point of view: a dependable, long-term food supply.

This is a possibility that is obviously imperiled – by antipathy in high places, by adverse fashions and attitudes in the general public, by the deterioration of our present farm communities and traditions, by the flawed education and the inexperience of our young people. And yet it alone can promise us the continuity of attention and devotion without which the human life of the earth is impossible.

Sixty years ago, in another time of crisis, Thomas Hardy wrote these stanzas:

Only a man harrowing clods
In a slow silent walk
With an old horse that stumbles and nods
Half asleep as they stalk.

Only thin smoke without flame
From the heaps of couch-grass;
Yet this will go onward the same
Though Dynasties pass.

Today most of our people are so conditioned that they do not wish to harrow clods either with an old horse or with a new tractor. Yet Hardy's vision has come to be more urgently true than ever. The great difference these sixty years have made is that, though we feel that this work must go onward, we are not so certain that it will. But the care of the earth is our most ancient and most worthy and, after all, our most pleasing responsibility. To cherish what remains of it, and to foster its renewal, is our only legitimate hope.

Experts in the Environment

The disease of the modern character is specialization. Looked at from the standpoint of the social system, the aim of specialization may seem desirable enough. The aim is to see that the responsibilities of government, law, medicine, engineering, commerce, etc., are given into the hands of the most skilled, best prepared people. The difficulties do not appear until we look at specialization from the opposite standpoint – that of individual persons. We then begin to see the grotesquery – indeed, the impossibility – of an idea of community wholeness that divorces itself from any idea of personal wholeness.

The first, and best known, hazard of the system of specialization is that it produces specialists – people who are elaborately and expensively trained to do one thing. We get into absurdities very quickly here, educators who have nothing to teach, communicators who have nothing to say, medical doctors skilled at expensive cures for diseases that they have no skill, and no interest, in preventing. More common, and more damaging, are the inventors, manufacturers, and salesmen of devices, who have no concern for the possible effects of those devices. Specialization is thus seen to be a way of institutionalizing, justifying, and paying highly, a calamitous disintegration and scattering-out of the various functions of character: workmanship, care, conscience, responsibility.

Even worse, a system of specialization requires the abdication to specialists of various competences and responsibilities that were once personal and universal. Thus, the average – one is tempted to say, the ideal – American citizen now consigns the problems of food production to the agriculturists and "agri-businessmen," the problems of health to the doctors and sanitation experts, the problems of education to the school teachers and educationists, the problems of conservation to the conservationists, and so on and on. This supposedly fortunate citizen is therefore left with only two concerns: making money and entertaining himself. He earns money, typically, as a specialist, working an eight hour day at a job for the quality or consequences of which somebody else – or, perhaps more typically, nobody else – will be responsible. And not surprisingly, since he can do so little else for himself, he turns out to be unable even to entertain himself, for there exists an enormous industry of exorbitantly expensive specialists, whose purpose is to entertain him.

The beneficiary of this regime of specialists ought, one would suppose, to be the happiest of mortals. All of his vital concerns are in the hands of certified experts. He is a certified expert himself, and as such he earns more money in a year than all his great-grandparents put together. Between stints at his job he has nothing to do but mow his lawn with his sit-down lawn mower, or watch other certified experts on television. At suppertime he may eat a tray of ready-prepared food, which he and his wife (also a certified expert) procure at the cost only of money, transportation and the pushing of a button. For a few minutes between supper and sleep he may catch a glimpse of his children, who since breakfast have

been in the care of education experts, basketball or marching band experts, or perhaps legal experts.

The fact is, however, that this is probably the most unhappy average citizen in the history of the world. He has not the power to provide himself with anything but money, and his money is inflating like a balloon and drifting away, subject to historical circumstance and the power of other people. From morning to night he does not touch anything that he produced himself, in which he can take pride. For all his leisure and recreation, he feels bad, he looks bad, he is overweight, his health is poor. His air, water, and food are all known to contain poisons. There is a fair chance that he will die by choking. He suspects that his love life is not so fulfilling as other people's. He wishes that he had been born sooner, or later. He does not know why his children are the way they are. He does not understand what they say. He does not care much, and does not know why he does not care. He does not know what his wife wants, or what he wants. Certain advertisements, certain pictures in magazines make him suspect that he is basically unattractive. He feels that all his possessions are under threat of pillage. He does not know what he would do if he lost his job, if the economy failed, if the police went on strike, if the truckers went on strike, if his wife left him, if his children ran away, if he should be found to be incurably ill. And for these anxieties, of course, he consults certified experts who, in turn, consult certified experts about their anxieties.

It is rarely considered that this average citizen is anxious because he ought to be – because he still has some gumption that he has not yet given up in deference to the experts. He ought to be anxious, because he is helpless. That he is dependent upon so many specialists, the beneficiary of so much expert help, can only mean that he is a captive, a potential victim. If he lives by the competence of so many other people, then he lives also by their indulgence; his own will and his own reasons to live are made subordinate to the mere tolerance of everybody else. He has one chance to live what he conceives to be his life: his own small specialty within a delicate, tense, everywhere-strained system of specialties.

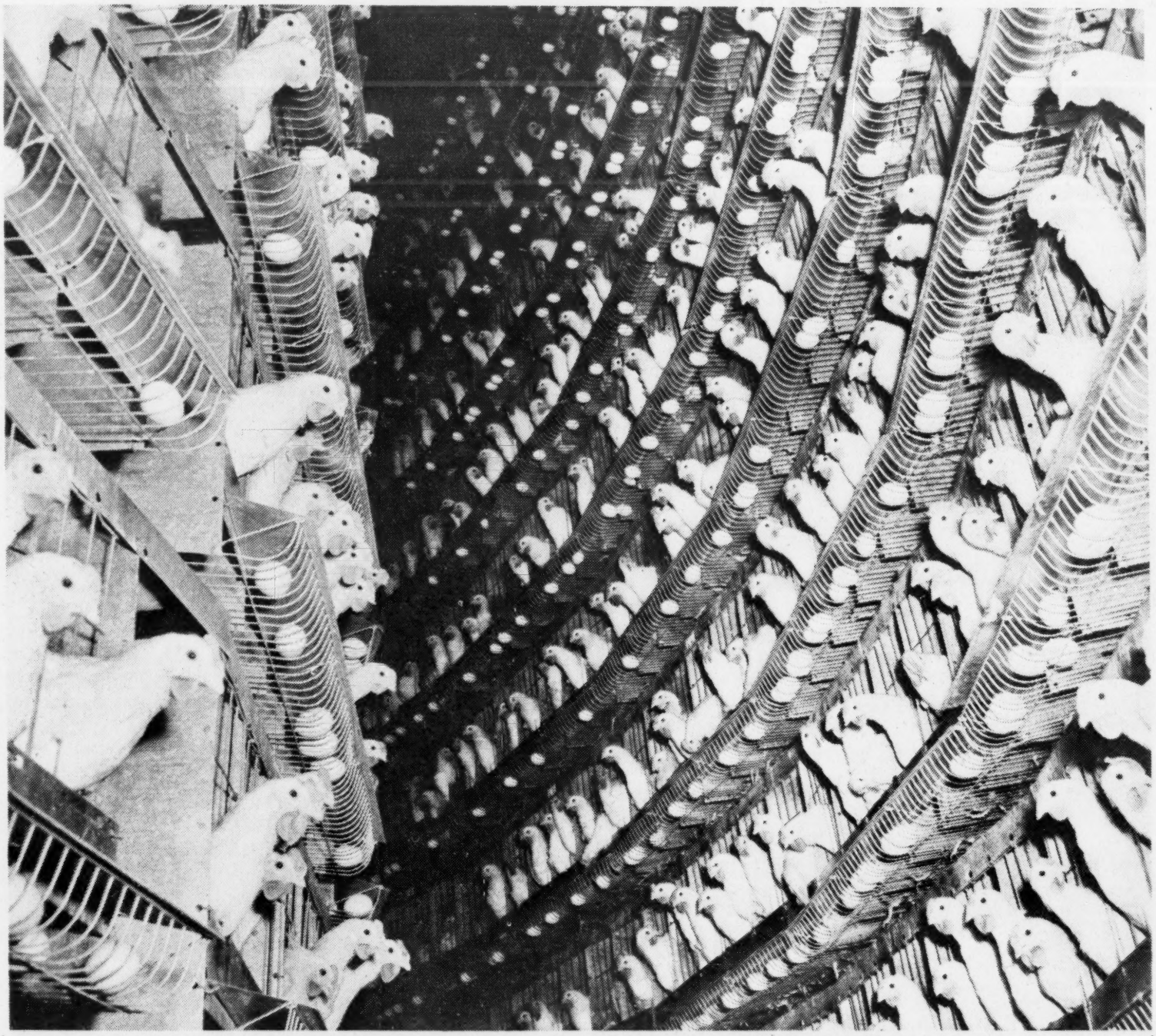
From a public point of view, the specialist system is a failure because, though everything is done by an expert, almost nothing is done well. Our typical industrial or professional product is both ingenious and shoddy. The specialist system fails from a personal point of view because a person who can do only one thing can do virtually nothing for himself. In living in the world by his own will and skill, the stupidist peasant or tribesman is more competent than the most intelligent worker or technician or intellectual in the specialist system.

What happens under the rule of specialization is that, though society becomes more and more intricate, it has less and less structure. It becomes more and more organized, but less and less orderly. It gains uniformity – to borrow terms from E.F. Schumacher – and loses unity. The community disintegrates because it loses the necessary understandings, forms, and enactments of the relations among materials and processes, principles and actions, ideals and realities, past and present, present and future, men and women, body and spirit, city and country, civilization and wilderness, growth and decay, life and death – just as the individual character loses the sense of a responsible involvement in these relations. No longer does human life rise from the earth like a pyramid, broadly and considerately founded upon its sources. Now it scatters itself out in a reckless horizontal sprawl, like a disorderly city whose suburbs and pavements destroy the fields, growing not by the husbanding and replenishment of its sources, but at their expense.

The concept of country, homeland, dwelling place becomes simplified as "the environment" – that is, what surrounds us. Once we see our place, our part of the world, as surrounding us, we have already made a profound division between it and ourselves. We have given up the understanding – dropped it out of our language and so out of our thought – that we and our country create one another, depend on one another, are literally part of one another; that our land passes in and out of our bodies just as our bodies pass in and out of our land; that as we and our land are part of one another, so all who are living as neighbors here, human and plant and animal, are part of one another, and so cannot possibly flourish alone; that, therefore, our culture must be our response to our place, our culture and our place are images of each other and inseparable from each other, and so neither can be better than the other.

Because by definition they lack any such sense of mutuality or wholeness, our specializations thrive on conflict with one another. The law is never to cooperate, but to follow one's own interest as far as possible. Checks and balances are all applied externally, by opposition – never by self-restraint. Labor, management, the military, the government, etc., never forbear until their excesses arouse enough opposition to force them to do so. The good of the whole of creation, the world and all its creatures together, is never thought of; our culture now simply lacks means for thinking of it.

It is for this reason that none of our basic problems is ever solved. Indeed, it is for this reason that our basic problems are getting worse. The specialists are profiting too well from the symptoms, evidently, to be enough concerned about cures – just as the myth of imminent cure (by some "breakthrough" of science or technology) is so lucrative and all-justifying as to foreclose any possibility of an interest in prevention. The problems thus become the stock-in-trade of the specialists. The so-called professions survive by endlessly "processing" and talking about problems that they have neither the will nor the competence to solve. The doctor who is interested in disease but not in health is clearly in the same category with the conservationist who invests in the destruction of what he otherwise intends to preserve. They both have the comfort of "job security," but at the cost of ultimate futility.



Chicken house holding 34,000 caged layers. New Mexico, 1970 THE PROGRESSIVE FARMER

One of the most troubling characteristics of the specialist mentality is its use of money as a kind of proxy, its willingness to transmute the powers and functions of life into money. "Time is money" is one of its axioms, and the source of many evils – among them the waste of both time and money. Akin to the idea that time is money is the concept, less spoken but as commonly assumed, that we may be adequately represented by money. "Giving" has thus become our characteristic virtue. "I gave" is a boast sometimes seen buttoned to people's lapels.

But to give is not to do. The money is given in lieu of action, thought, care, time. And it is no remedy for the fragmentation of character and consciousness that is the consequence of specialization. At the simplest, most practical level, it would be difficult for most of us to give enough in donations to good causes to compensate for, much less remedy, the damage done by the money that is taken from us and used destructively by various agencies of the government and the corporations that hold us in captive dependence on their products. More important, even if we could give enough to overbalance the official and corporate misuse of our money, we would still not solve the problem: the willingness to be represented by money involves a submission to the modern divisions of character and community. This remedy safeguards the disaster.

* * *

The idea of "kindly use"

One reason that an organization cannot properly enact our relationship to the world is that an organization cannot define that relationship except in general terms, and no matter how general may be a person's attitude toward the world, his impact upon it must become specific and tangible at some point. Sooner or later in his behalf – whether he approves or understands or not – a strip miner's bulldozer tears into a mountainside, a stand of trees is clear cut, a gully washes through a cornfield.

The conservation impulse or movement, as such, has never resolved this dilemma. As such, I think, it has never faced it. Until very recently – until pollution and strip-mining became critical issues – conservationists divided the country into that land which they wished to preserve and enjoy (the wilderness areas)

Spring Plowing. New England, 1899. **GEORGE TINGLEY**

and that which they consigned to use by other people. With the increase of pollution and mining, their interest has become two-branched, to include, along with the pristine, the critically abused. At present the issue of use is still in its beginning.

Because of this, the mentality of conservation is divided, and disaster is implicit in its division. It is divided between its intentional protection of some places and some aspects of "the environment," and its inadvertent destruction of others. It is variously either vacation-oriented or crisis-oriented. For the most part, it is not yet sensitive to the impact of daily living upon the sources of daily life. The typical present-day conservationist will fight to preserve what he enjoys; he will fight whatever directly threatens his health; he will oppose any environmental catastrophe that is sufficiently blatant or dramatic, such as strip-mining. But he has not yet worried much about the impact of his own livelihood or habits or pleasures or appetites. He has not, in short, addressed himself to the problem of use. He does not have a definition of his relationship to the world that is sufficiently elaborate and exact.

The problem is well defined in a letter I received from David Budbill of Wolcott, Vermont:

> "What I've noticed around here with the militant ecology people (don't get me wrong, I, like you, consider myself one of them) is a syndrome I call the Terrarium View of the World: nature always at a distance, under glass.
>
> "Down-country people come up here, buy a 30-acre meadow, then when you ask them what they plan to do with it, they look at you like you're some kind of war criminal and say, 'Why, nothing! We want to leave it just the way it is!' They think they're protecting the environment, even though they've forgotten, or never knew, nature abhors a vacuum . . . and in a couple of years their meadow is full of hardhack and berries and young gray birch and red maple. Pretty soon they can't even walk through the brush it's so thick. They treat the land like any other possession, object, they own, set it aside, watch it, passively, not wanting to, nay! thinking it abhorrent to engage in a living relationship with it . . .
>
> "Another thing folks like this do is buy land and immediately post it (to protect the animals, or their investment, I guess) then go back home . . . The old guy or the young guy who has always hunted deer on that piece is mad. The excuse for posting (protection) is a thinly disguised cover for the real notion which has to do with the possessive, capitalist ideas about property. I'm not opposed to private property, like it even, but the folks I'm talking about, in their posting, violate . . . a strong local tradition of free trespass. There are disadvantages to free trespass, abuses, we've suffered them, but what's good about it is it understands something about use and sharing. The upper-class eco-folks lack this understanding . . .
>
> ". . . We always, with our neighbor, pick apples in the fall off trees on a down-country owner's land. There is a feeling we have the right to do that, a feeling that the sin is not trespass, the sin is letting the apples go to waste.
>
> "What I'm trying to get at is that in the environmental movement there are some ugly, elitist, class-struggle type things operating. The best example of this around here is the controversy over trailers.* The Audubon types (I'm a member of Audubon) are fighting, but not me, terribly hard to zone trailers out of areas like this, put

**It gets ironic at times. Here's a note we got recently from the author of "Healing the Land" in the Winter 76/77* CQ.
—SB

Our travel trailer office was declared illegal, so we moved into the tiny basement of our other trailer. Now that trailer has been declared illegal for use for our office and for our day care center. We stand an excellent chance of losing our $12 K AB 3059 grant for our pre-school 'cause of lack of a "licensable facility." Small is beautiful my ass — small is very difficult.

—Gerald E. Myers
Redwood Creek Renewal
Garberville, California

them in trailer parks or eliminate them altogether. Well, a trailer is the only living space a working man around here can afford. And if he, say, inherits 3 acres from a parent and wants to put a trailer on it, the eco-folks would like to say no, which is a dandy way to ghettoize the poor. There are so many elements of class struggle lying under the attitudes of a lot of environmentalists; it's scary . . . Their view of the natural world is so delicate and precious, terrarium-like, picture-windowish. I know nature is precious and delicate. I also know it is incredibly tough and resilient, has unbelievable power to respond to and flourish with kindly use.

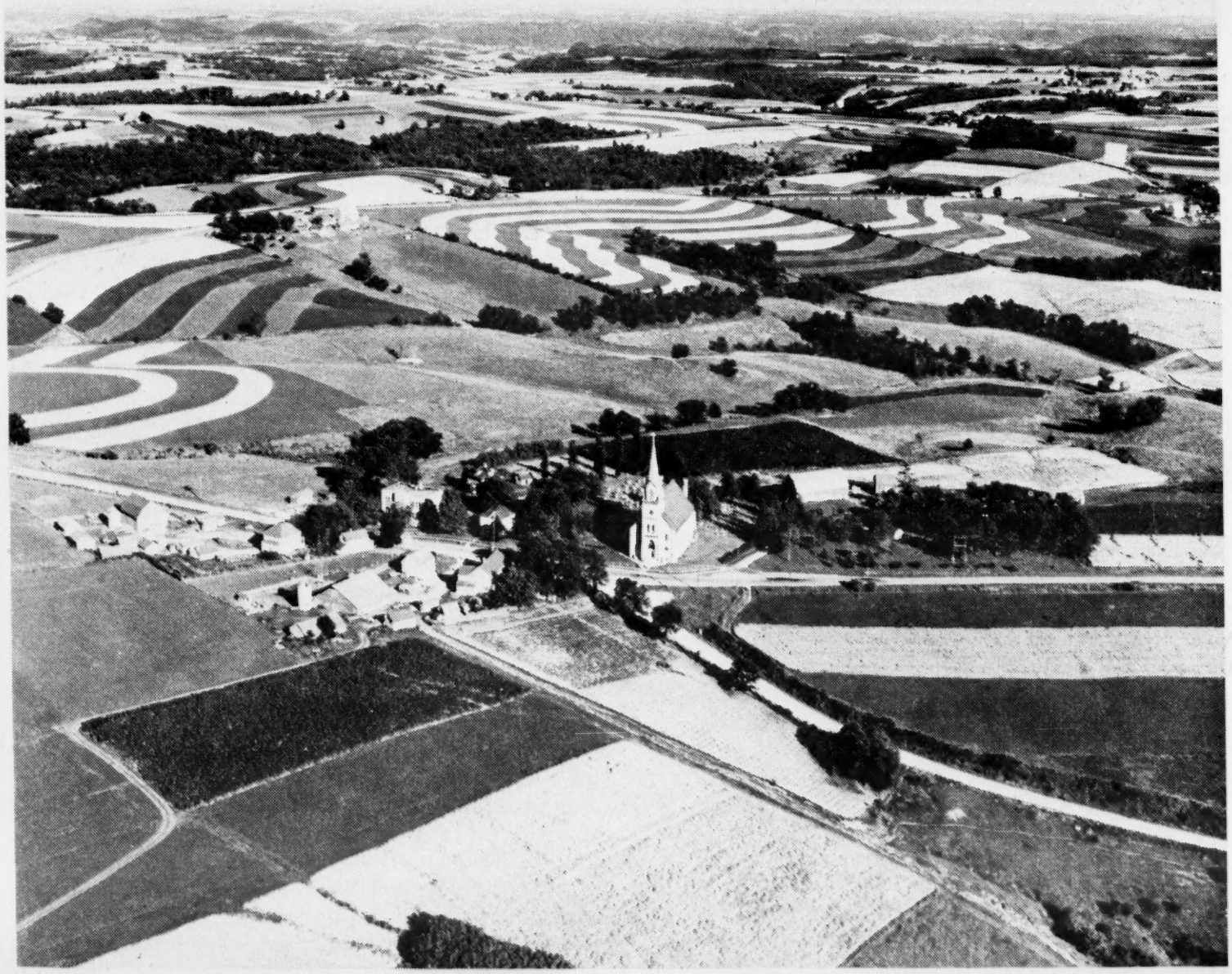
". . . I don't care about the landscape if I am to be excluded from it. Why should I? In Audubon magazine almost always the beautiful pictures are without man; the ugly ones with him. Such self hatred! I keep wanting to write to them and say, 'Look! my name is David Budbill and I belong to the chain of being too, as a participant not an observer (nature is not television!) and the question isn't to use or not to use but rather how to use.' "

The conservationist congratulates himself, on the one hand, for his awareness of the severity of human influence on the natural world. On the other hand, in his own contact with that world, he can think of nothing but to efface himself – to leave it just the way it is.

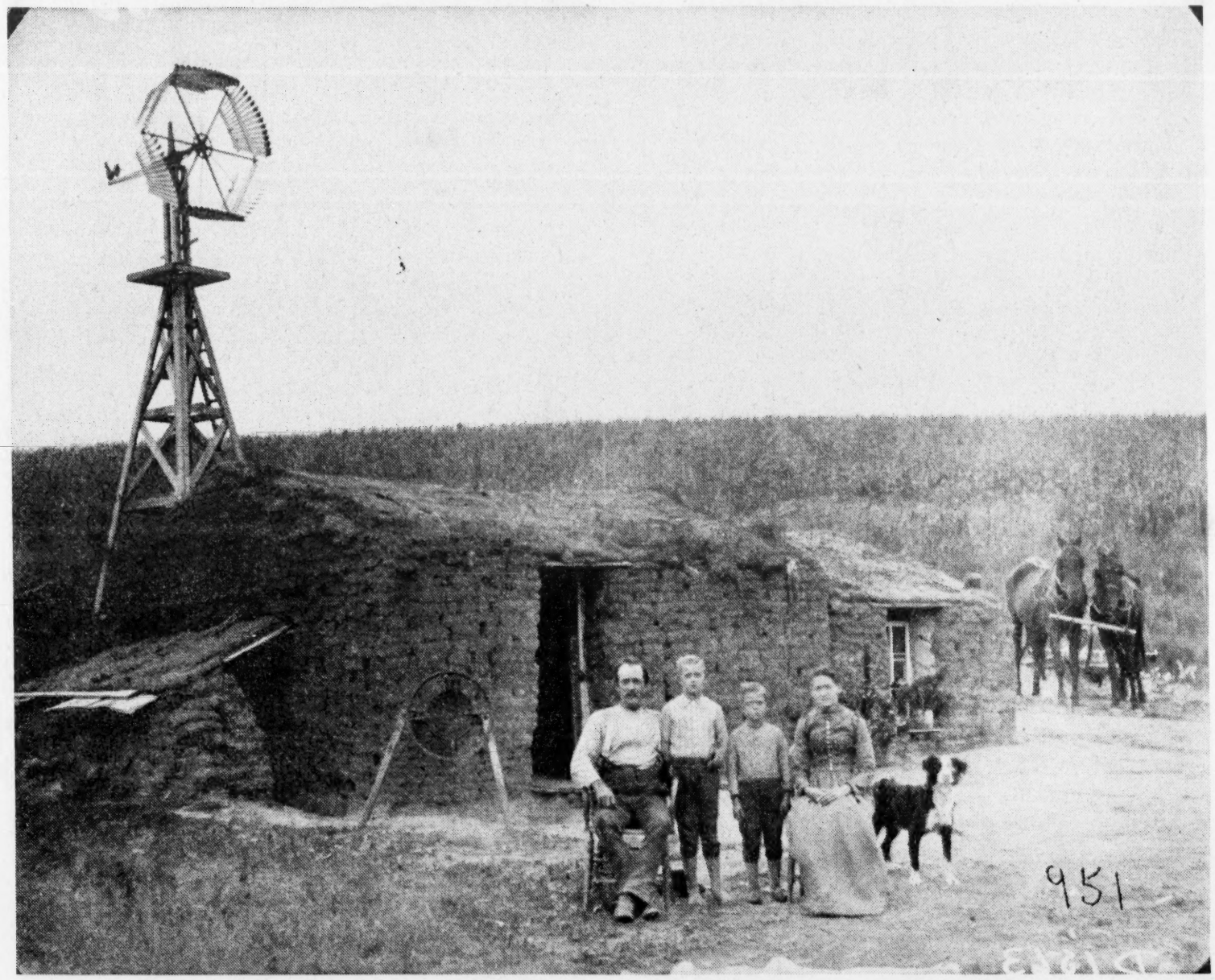
This is an important issue, and I want to be careful not to oversimplify it. What has to be acknowledged at the outset is that wilderness conservation is important, and it has its place in any conservation program, just as the wilderness has its place in human memory and culture. It seems to me likely that the concern for wilderness must stand at the apex of the conservation effort, just as it probably must stand at the apex of consciousness in any decent culture. There are several reasons for this:

1. Our biological roots and our cultural roots as well are in nature. We began in a world that was pristine, undiminished by anything we had done, and at various times in our history the unspoiled wilderness has again imposed itself, its charming and forbidding invitation, upon our consciousness. It is important that we should preserve this memory. We need places in reach of every community, where its children can imagine the prehistoric and the beginning of history: the unknown, the trackless, the first comers.

2. If we are to be properly humble in our use of the world, we need places that we don't use at



Wisconsin, 1957. E. W. COLE



Nebraska, c. 1886. SOLOMON BUTCHER

all. We need the experience of leaving something alone. We need places that we forbear to change, or influence by our presence, or impose on even by our understanding – places that we accept as influences upon us, not the other way around, that we enter with the sense, the pleasure, of having nothing to do there – places that we must enter in a kind of cultural nakedness, without comforts or tools, to submit rather than to conquer. We need what other ages would have called sacred groves. We need groves, anyhow, that we would treat as if they were sacred – in order, perhaps, to perceive their sanctity.

3. We need wilderness as a standard of civilization and as a cultural model. Only by preserving areas where the processes of nature are undisturbed can we preserve an accurate sense of the impact of civilization upon its natural sources. Only if we know how the land was can we tell how it is. Records, figures, statistics will not suffice: to know, in the true sense, is to see. We must see the difference – in rates of erosion, for instance, or in soil structure or fertility – in order to keep it as small as possible. As a cultural model, the wilderness is probably indispensable. Sir Albert Howard suggests this forcibly when he says that farmers should pattern the maintenance of their fields after the forest floor, for the forces of growth and the forces of decay are in balance there.

But we cannot hope – for reasons practical and humane, we cannot even wish – to preserve more than a small portion of the land in wilderness. Most of it we will have to use. The conservation mentality swings from self-righteous outrage to self-deprecation because it has neglected this issue. These contradictions can only be reconciled – and the conservation impulse made to function as ubiquitously and variously as it needs to – by understanding, imagining, living out the possibility of "kindly use." Only that can dissolve the boundaries that divide people from the land and its care, which together are the source of human life. There are many kinds of land use, but the one that is most universal and widespread is that of agriculture, and that is the use I will consider here.

Like most real solutions, the possibility of kindly use is weighted with problems. In the first place, this is not ultimately an organizational or institutional solution. Institutional solutions tend to narrow and simplify as they approach action. A large number of people can act together only by defining the point or the line on which their various interests converge. Organizations tend to move toward single objectives

Nebraska, 1887. SOLOMON BUTCHER

– a ruling, a vote, a law – and they find it relatively simple to cohere under acronyms and slogans.

But kindly use is a concept that of necessity broadens, becoming more complex and diverse, as it approaches action. The land is too various in its kinds, climates, conditions, declivities, aspects, histories to conform to any generalized understanding, or to prosper under generalized treatment. The use of it cannot be both general and kindly – just as the forms of etiquette, generally applied (applied, that is, without consideration of differences), are experienced as indifference, bad manners. To treat everybody with the same consideration is not democracy but tyranny; to treat every field, or every part of every field, with the same consideration is not farming but industry. Kindly use depends upon intimate knowledge, the most sensitive responsibleness and responsibility. As knowledge (hence, use) is generalized, essential values are destroyed. As the householder evolves into a consumer, the farm evolves into a factory – with results that are potentially calamitous for both.

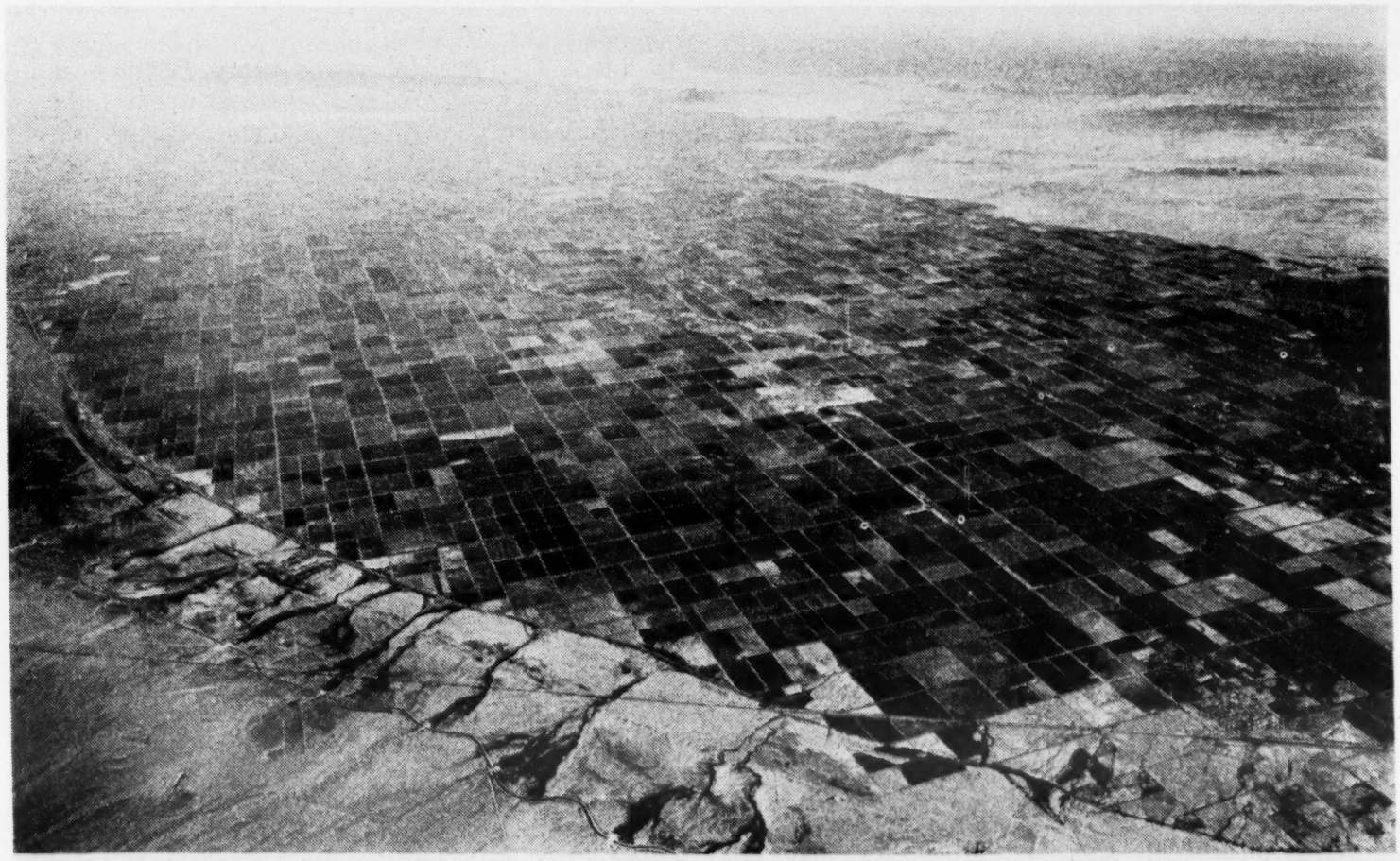
The understanding of kindly use in agriculture has to comprehend both of these ideas, farm and household, for the mutuality of influence between them is profound. To begin with, of course, the idea of a farm included the idea of a household: an integral and major part of a farm's economy was the economy of its own household; the family that owned and worked the farm lived from it. But the farm also helped to feed other households in towns and cities. These households were dependent on the farms, but not passively so, for their dependence was limited in two ways. For one thing, the town or city household was once itself often a producer of food: at one time town and city lots routinely included garden space, and often pens and buildings to accommodate a milk cow, fattening hogs, flocks of poultry. For another thing, the urban household carefully selected and prepared the food that it bought; the neighborhood shops were suppliers of kitchen raw materials to local households, of whose needs and tastes the shopkeepers had personal knowledge; they were under the direct influence and discipline of their customer's wants, which they had to supply honestly if they hoped to prosper. The household was thus not merely a unit in the economy of food production, but also a unit of essential productive skill. The consumers of food were also producers or processors of food, or both.

This collaboration of household and farm was never, in America, sufficiently thrifty or sufficiently careful of soil fertility. It is tempting to suppose that, given certain critical historical and cultural differences,

they might have developed sufficient thrift and care. As it happened, however, the development went in the opposite direction. The collaborators purified their roles – the household became simply a house or residence, purely consumptive in its function; the farm ceased to be a place to live and a way of life, and became a unit of production – and their once collaborative relation became competitive. And between them the merchant, who had been only a supplier of raw materials, began to usurp the previous functions of both household and farm, becoming increasingly both a processor and producer. And so an enterprise that once had some susceptibility to qualitative standards – standards of personal taste and preference at one end, and of good husbandry at the other – has come more and more under the influence of standards that are merely economic or quantitative. The consumer wants food to be as cheap as possible. The producer wants it to be as expensive as possible. Both want it to involve as little labor as possible. And so the standards of cheapness and convenience, which are irresistibly simplifying and therefore inevitably exploitive, have been substituted for the standard of health (of both people and land), which would enforce consideration of essential complexities.

Social fashion, delusion, and propaganda have combined to persuade the public that our agriculture is for the best of reasons "the envy of the modern world." American citizens are now ready to believe without question that it is entirely good, a grand accomplishment, that each American farmer now "feeds himself and 56 others." They are willing to hear that "96 percent of America's manpower is freed from food production" – without asking what it may have been "freed" for, or how many as a consequence have been "freed" from employment of any kind. The "climate of opinion" is now such that a recent Assistant Secretary of Agriculture could condemn the principle of crop rotation without even an acknowledgement of the probable costs in soil depletion and erosion; and former Secretary of Agriculture Butz could applaud the fact that in 1974 "only 4 percent of all U.S. farms . . . produced almost 50 percent of all farm goods," without acknowledging the human – and, indeed, the agricultural – penalties.

What these men were praising – what such men have been praising for so long that the praise can be uttered without thought – is a disaster that is both agricultural and cultural: the generalization of the relationship between people and land. That one American farmer can now feed himself and fifty-six other people may be, within the narrow view of the specialist, a triumph of economics and technology; by no stretch of reason can it be considered a triumph of agriculture or of culture. It has been made possible by the substitution of energy for knowledge, of methodology for care, of technology for morality. This "accomplishment" is not primarily the work of farmers – who have been, by and large, its victims – but of a collaboration of corporations, university specialists, and government agencies. It is therefore an agricultural development not motivated by agricultural aims or disciplines, but by the ambitions of merchants, industrialists, bureaucrats, and academic careerists. We should not be surprised to find that its effect on both the farmland and the farm people has been ruinous. It has divided all land grossly into two kinds – that which permits the use of large equipment, and that which does not. And it has divided all farmers grossly into two kinds – those who have sufficient "business sense" and managerial



Farmland without farmhouses. Imperial Valley, California, 1973. **GEORG GERSTER**

Plowing land for cotton. Oklahoma Territory, 1905. MARK A. CARLETON

ability to handle the large acreages necessary to finance large machines, and those who do not.

Those lands that are too steep or stony or small-featured to be farmed with big equipment are increasingly not farmed at all, but are abandoned to the weeds and bushes, often with the gullies of previous bad use unrepaired. That these lands can often be made highly productive with kindly use is simply of no interest; we now have neither the small technology nor the small economics nor the available work force necessary to make use of them. What might be the importance of these "marginal" lands, and of an agricultural technology and economy appropriate to them, in the light of population growth, is a question that the agriculture experts would apparently be embarrassed to consider, so entranced are they by the glamor of bigness.

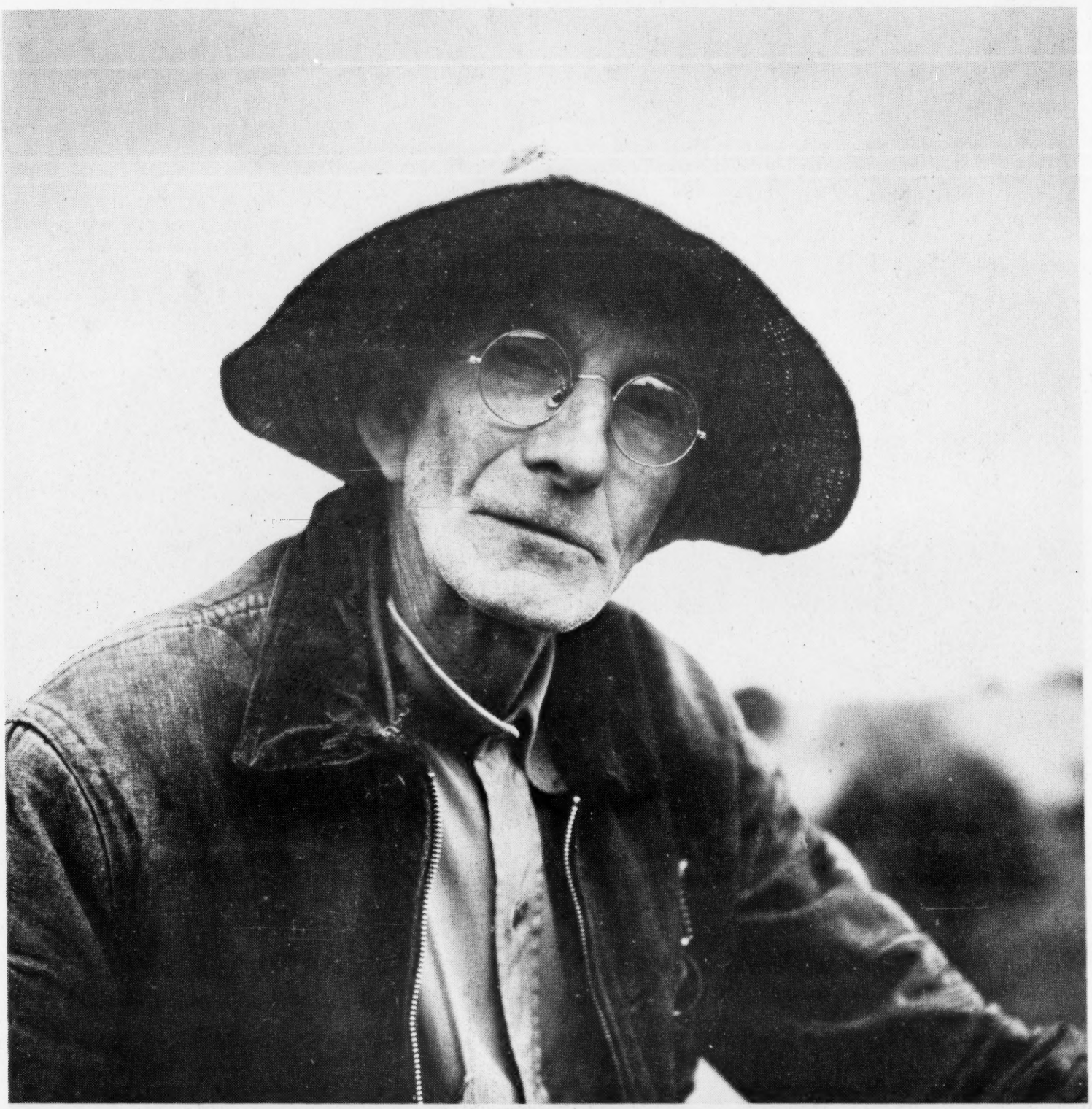
* * *

When any species or group exceeds the principle of usufruct (literally: the use of the fruit) it puts itself into danger. Then, to use an economic metaphor, it is living off the principal rather than the interest. It has broken out of the system of nurture and has become exploitive; it is destroying what gave it life and what it depends upon to live. In all of these systems a fundamental principle must be the protection of the source: the seed, the food species, the soil, the breeding stock, the old and the wise, the keepers of memories, the records.

* * *

Future-rapture

What has drawn the Modern World into being is a strange, almost occult yearning for the future. The modern mind longs for the future as the Medieval mind longed for Heaven. The great aim of modern life has been to improve the future – or even just to reach the future, assuming that the future will inevitably be "better." One of the oddest terms of praise in the language, surely, is "futuristic." "Far out," as a term of universal approbation, is perhaps a lineal descendent. Such terms are used to identify the signs and landmarks that confirm that we are indeed on the right road to the future, that we are getting there, that at any moment we may at last arrive. And this is no elitist obsession; it is commonplace. Politicians understand very well the power of the promise to build a better or more prosperous or more secure future. Parents characteristically strive and sacrifice to make a better or more secure future for their children. Workers work toward a secure



Pennsylvania farmer, 1945. **SOL LIBSOHN**

future in which they will retire and enjoy themselves. Our obsession with security is a measure of the power we have granted the future to hold over us.

The future has been envisioned, dreamed, projected, painted for us by prophets of every kind: scientists, comic book writers, novelists, philosophers, politicians, industrialists, professors. And of course by ourselves; the cult of the future has turned us all into prophets. The future is the time when science will have solved all our problems, gratified all our desires; when we will all live in perfect ease in an airconditioned, fully automated womb; when all the work will be done by machines so sophisticated that they will not only clothe, house, and feed us, but think for us, play our games, paint our pictures, write our poems. It is the Earthly Paradise, the Other Shore, where all will be well. And if we are living for the future, then history is on our side – or so we are at liberty to think, for the needed proofs are never at hand. That there has for some time been growing a cult of dread of the future testifies not only to the innate silliness and frivolity of this vision, but to its power. The adoration of the future may be beginning to falter, but it is still dominant, still available and useful to the exploitive mind.

There is no aspect of our life as a people that is not now under the dominance of this industrial dream of the future-as-Paradise. All implements of use – automobiles, tractors, kitchen utensils, etc. – have always been conceived by the modern mind as in a kind of progress or pilgrimage toward their future forms. The automobile-of-the-future, the kitchen-of-the-future, the classroom-of-the-future have long figured more actively in our imaginations, plans, and

Oklahoma farmer, 1946. HAROLD CORSINI

desires than whatever versions of these things we may currently have. We long ago gave up the wish to have things that were adequate or even excellent; we preferred to have things that were up-to-date. But to be up-to-date is an ambition with built-in panic: our possessions cannot be up-to-date more than momentarily unless we can stop time – or somehow get ahead of it. The only possibility of satisfaction is to be driving now in one's future automobile.

It is no doubt impossible to live without thought of the future; hope and vision can live nowhere else. But the only possible guarantee of the future is responsible behavior in the present. When supposed future needs are used to justify misbehavior in the present, as is the tendency with us, then we are both perverting the present and diminishing the future. But the most prolific source of justifications for exploitive behavior has been the future. The exploitive mind characteristically puts itself in charge of the future. The future is a time that cannot conceivably be reached except by industrial progress and economic growth. The future, so full of material blessings, is nevertheless threatened with dire shortages of food, energy, security unless we exploit the earth even more "freely" – with greater speed and less caution. The obvious paradoxes involved in this – that we are using up future necessities in order to make a more abundant future; that final loss has been made a calculated strategy of annual gain – have so far been understood to no great effect. The great convenience of the future as a context of behavior is that nobody knows anything about it. No rational person can see how using up the topsoil or the fossil fuels as quickly as possible can provide greater security for the future; but if enough wealth and power can conjure up the

rhetorical confidence to say that it can, then sheer fantasy is given the force of truth; the future becomes reckonable as even the past has never been. It is as if the future is a newly discovered continent, which the corporations are colonizing. They have made redskins of our descendents, holding them subject to alien values, while their land is plundered of anything that can be shipped home and sold.

* * *

The exploded household

To divide body and soul, or body and mind, is to inaugurate an expanding series of divisions – not, however, an infinitely expanding series, because it is apparently the nature of division sooner or later to destroy what is divided; the principle of durability is unity. The divisions issuing from this basic one are first, sexual, and then ecological. Many other divisions branch out from those, but those are the most important, because they have to do with the fundamental relationships – with each other and with the earth – that we all have in common.

To think of the body as separate from the soul or as soulless, either to subvert its appetites or to "free" them, is to make an object of it. As a thing, the body is denied any dimension or rightful presence or claim in the mind. The concerns of the body – all that is comprehended in the term nurture – are thus degraded, denied any respected place among the "higher things" and even among the more exigent practicalities.

The first sexual division comes about when nurture is made the exclusive concern of women. This cannot happen until a society becomes industrial; in hunting and gathering and in agricultural societies, men are of necessity also involved in nurture. In those societies there have usually been differences between the work of men and that of women. But the necessity here is to distinguish between sexual difference and sexual division.

In an industrial society, following the division of body and soul, we have at the "upper" or professional level a division between "culture" (in the specialized sense of philosophy, art, the humanities, etc.) and "practicality," and both of these become increasingly abstract. Thinkers do not act. And the "practical" men do not work with their hands, but manipulate the abstract quantities and values that come from the work of "workers." Workers are simplified or specialized into machine-parts to do the wage-work of the body, which they were initially permitted to think of as manly because for the most part women did not do it.

Woman had been doing the most confining – though not necessarily the least dignified – tasks of nurture: housekeeping, the care of young children, food preparation. In the urban-industrial situation the confinement of these traditional tasks divided women more and more from the "important" activities of the new economy. Also in this situation the traditional nurturing role of men – that of provisioning the household, which in an agricultural society had become as constant and as complex as the women's role – became completely abstract; the man's duty to the household came to be simply to provide money. The only remaining task of provisioning – purchasing food – was turned over to women. This determination that nurturing should become exclusively a concern of women served to signify to both sexes that neither nurture nor womanhood was very important.

* * *

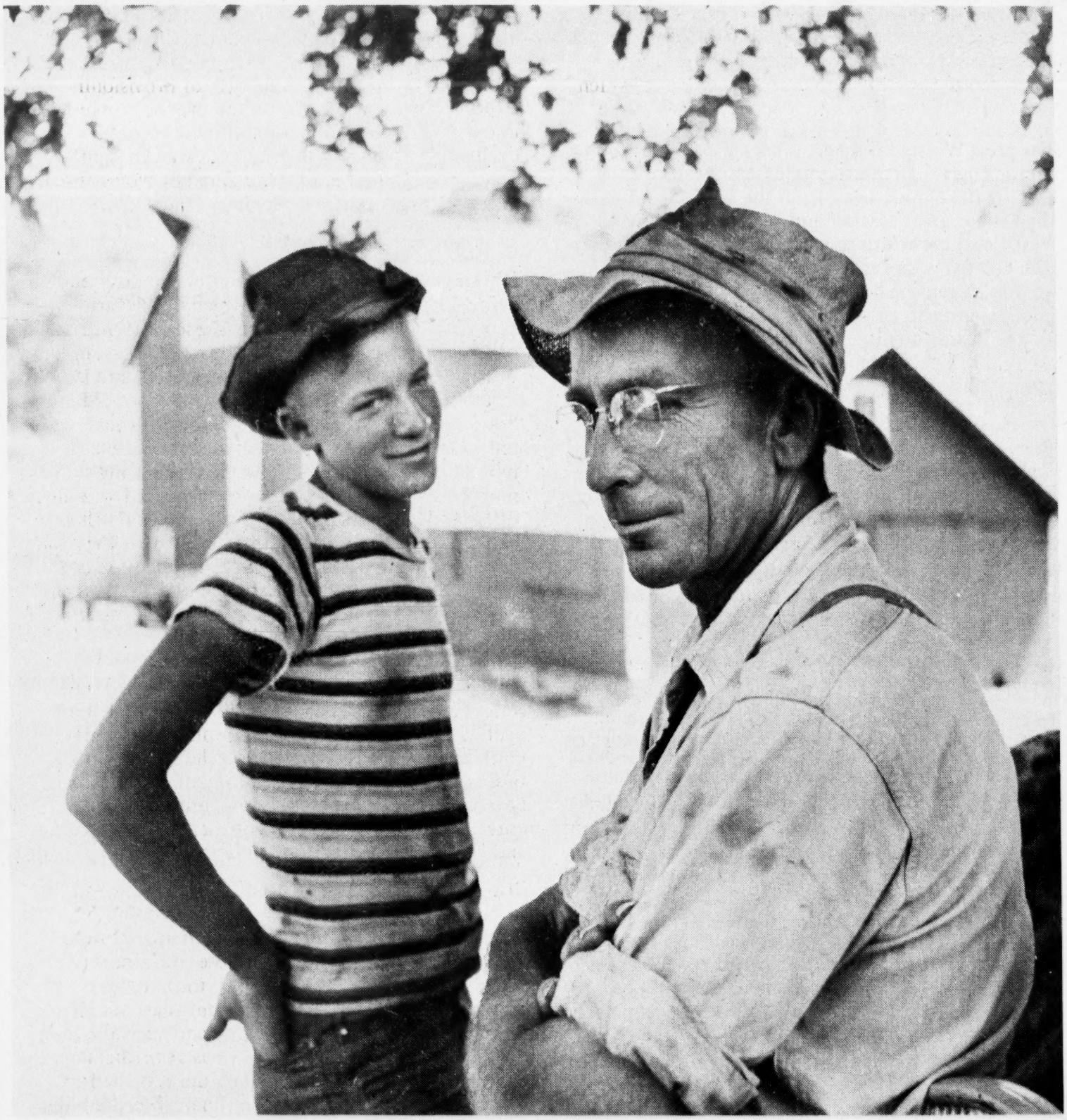
We are familiar with the concept of the disintegral life of our time as an exploded cathedral, the various concerns of culture no longer existing in reference to each other, or within the discipline of any understanding of their unity. It may also be conceived, and its strains more immediately felt, as an exploded household. Without the household – not just as a unifying ideal, but as a practical circumstance of mutual dependence and obligation, requiring skill, moral discipline, and work – husband and wife find it less and less possible to imagine and enact their marriage. Without much in particular that they can do for each other, they have a scarcity of reasons to be together. They may "like each other's company," but that is a reason for friendship, not for marriage.

* * *

The modern urban-industrial society is based on a series of radical disconnections between body and soul, husband and wife, marriage and community, community and the earth. At each of these points of disconnection the collaboration of corporation, government, and expert sets up a profit-making enterprise that results in the further dismemberment and impoverishment of the Creation.

Together, these disconnections add up to a condition of critical ill health, which we suffer in common, not just with each other, but with all other creatures. Our economy is based upon this disease. Its aim is to separate us as far as possible from the sources of life – material, social, and spiritual; to put these sources under the control of corporations and specialized professionals; and to sell them to us at the highest profit. It fragments the Creation and sets the fragments into conflict with one another. For the relief of the suffering that comes of this fragmentation and conflict, our economy proposes, not health, but vast "cures" that further centralize power and increase profits: wars, wars on crime, wars on poverty, national schemes of medical aid, insurance, immunization, further industrial and economic "growth," etc; and these of course are followed by more regulatory laws and agencies to see that our health is protected, our freedom preserved, and our money well spent. Although there may be some "good intention" in this symbiosis of exploitation, there is little honesty, and no hope.

Only by restoring the broken connections can we be healed. Connection is health. And what our society does its best to disguise from us is how ordinary, how commonly attainable health is. We lose our health – and create profitable diseases and dependences – by failing to see the direct connections



Illinois, 1955. ARCHIE LIEBERMAN

between living and eating, eating and working, working and loving. In gardening, for instance, one works with the body to feed the body. The work, if it is knowledgeable, makes for excellent food. And it makes one hungry. The work thus makes eating both nourishing and joyful, not consumptive, and keeps the eater from getting fat and weak. This is health, wholeness, a source of delight. And such a solution, unlike the typical industrial solution, does not cause new problems.

The "drudgery" of growing one's own food, then, is not drudgery at all. (If we make the growing of food a drudgery, which is what agribusiness does make of it, then we also make a drudgery of eating, and of living.) It is, in addition to being the appropriate fulfillment of a practical need, a sacrament, as eating is also, by which we enact and understand our oneness with the Creation, the conviviality of one body with all bodies. This is what we learn from the hunting and farming rituals of tribal cultures.

As the connections have been broken by the fragmentation and isolation of work, they can be restored by restoring the wholeness of work. There is work that is isolating, harsh, destructive, specialized or trivialized into meaninglessness. And there is work that is restorative, convivial, dignified and dignifying, pleasing. Good work is not just the maintenance of connections – as one is now said to work "for a living" or "to support a family" – but the enactment of connections. It is living, and a way of living; it is not support for a family, in the sense of an exterior brace or prop, but one of the forms and acts of love. ▪

Greywater Re-use

BY PETER WARSHALL

The great Western drought is brought to you by the Pacific High – an atmospheric high pressure zone holding the clouds away from the land. The Pacific High is our great teacher and has already upped West Coast consciousness in a way thought unbelievable just five years ago. Perhaps the greatest lesson is: we don't need the highest quality drinking water (piped, pumped, chlorinated, floridated and aerated) for the lowest quality use – flushing the toilet. We surely don't need super-expensive water of drinking quality to water our gardens.

The Pacific High has led to a new respect for greywater – the wastewater from all the fixtures in your home except the toilet. Greywater is 40 to 60% of all your household water – draining from the kitchen sink, the utility sink, the shower and bath, the dishwasher and clotheswasher. Below are some preliminary advice and thoughts about greywater – a quality of water to be revered and studied much more thoroughly.

NOTE: It's all illegal. No Health Department has given permission to legally use greywater, though a few have "temporarily" suspended prohibitions. In Marin County (home of the CQ office) it is allowable for the duration of the drought only. Don't worry about the health problems. Although there are definitely "germs" in greywater, it's hard to believe that using greywater is any more dangerous than changing a baby diaper. Health problems are being studied by the California Office of Appropriate Technology and the University of Wisconsin. We'll report their results as they appear. Do take the precautions listed below – just to be conservative.

NOTE: Everything you do to recycle greywater will be in violation of the Uniform Plumbing Code. Don't sweat it. These troglodyte rules need drastic overhauling in order to promote water conservation and re-use. The Pacific High is our best political ally.

SAVING WATER

Before you re-use greywater, you should try to save as much water as possible. Human wasteful habits are in bad need of change. Change them like so:

- Don't use toilet to flush down cigarette butts and facial tissues. Use the wastepaper basket.
- Piss outside. Try to spread the piss around as it will burn the ground if you piss in the same spot. Ladies too can piss on the ground.
- If you must piss in the toilet (no outside available), then don't flush after each piss. Use your nose and eye to decide when it's really necessary.
- Use water-savers in your toilet tank (bricks, plastic bottles, etc.). Almost all water/sewage departments have them.
- Shorter showers. A five-minute shower can use 15 to 50 gallons. A flow reducer doesn't help if you take a longer shower. Shower with a friend – unless it's too much fun and you hang out too long. Share the bath tub. Unless you take a five minute shower, a partially filled bath tub will use less water. (About one-quarter full seems enough.) Turn off the shower for shampooing and soaping up.
- Run the dishwasher only with full loads – each load is 12 to 17 gallons. Scrape dishes (don't wash them) before you use the dishwasher. Use low-sudsing detergents as they rinse quicker. Depending on family size, a dishwasher can use less water than all but the most frugal hand washers.
- Clotheswashers: Use a suds-saver if available (an auxilliary tank that saves 16 - 19 gallons). Use the variable water level control. Full loads only, please.
- Food: Steam foods rather than boil them. Use woks, steamers, pressure cookers or broilers. Water used to cook vegetables can be recycled in a soup. Don't quick-thaw frozen foods with running water. Wash vegetables in a basin (plastic or metal), not running water.
- NO GARBAGE GRINDERS. Compost it all.
- Outdoors: water in the early morning (less evaporation). Water slowly, deeply and infrequently. Don't let water run down the gutter. Sweep the sidewalks and patios. MULCH AS MUCH AS YOU CAN. Don't use sprinklers with fine mists – too much is lost.

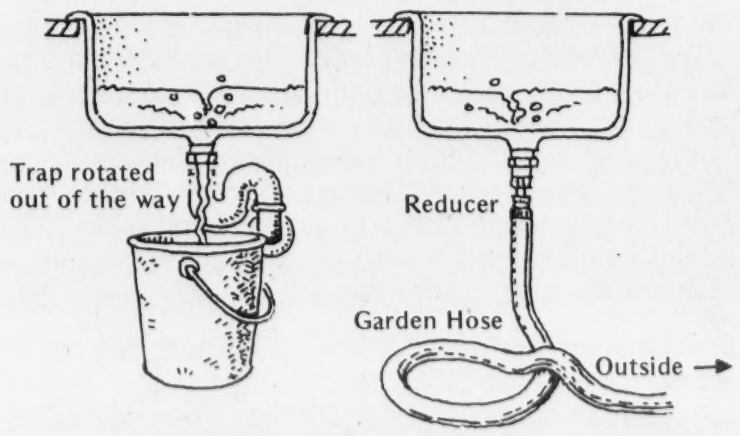
RE-USE OF GREYWATER

The easiest re-use of greywater is in the garden. Greywater is perfectly safe for trees, ornamentals, dope, artichokes, tomatoes, pasture or lawn, and any processing fruit (like strawberries for jam). Here are a few precautions. No boron products (like Borax) in the greywater – they will kill your garden. Not too much water softener – the salts change clay soils and compact them. Avoid using greywater on leaf crops (like lettuce). If the crop will be cooked (like spinach), it's no big deal, but raw leaf vegetables are the major source of stomach upsets. No detergents with ABS, which is a plant killer. Bio-degradable detergents do not have ABS.

Greywater can also be used to flush the toilet. Simply turn the water to the tank off and collect the grey water (see below) and fill the toilet tank or pour directly into the toilet bowl – instant flush.

THE KITCHEN SINK

The kitchen sink is a major problem in greywater recycling because of the grease which hardens and clogs pipes. Three easy ways to avoid kitchen greywater problems are: (1) Wash dishes in a plastic basin and then simply throw the water out the door; (2) Disconnect the pipe under the sink and collect the kitchen water in a bucket and empty it outside; (3) Have a special pipe just from the sink to the outdoors – move the hose around so the grease does not accumulate in one spot (you'll notice it if you don't).



When the sink or basin is disconnected the sewer inlet must be closed. Either rotate the trap to one side and leave water in it, or remove the trap and cap the pipe it was connected to.

[Continued on p. 77]

The Most Unusual Letter We've Ever Received

BY C. SCOTT VAN STRUM

Sirs:

Your articles on the Hoedads remind me of my own extraordinary experience with these remarkable workers – and with the fuzzy boundary between "reality" and illusion.

For twenty-five years I worked as a librarian at the university. After my husband left to live with one of his students twelve years ago I began exploring all the areas I had never ventured into for fear of intruding in his domain or inspiring his ridicule. I took up music again where I had dropped it at our marriage and joined a small chamber group. I adopted a cat. I bought buckets of white latex and painted the dark paneling of our house. I filled the trash bins with phony pre-columbian dolls and useless colonial hinges and latches. I sold all the Herman Hesse and Carl Jung. Not a particularly adventurous life, but comfortable and ordered.

One remnant I kept of our life together was the collection of children's books we had begun when we were expecting our first and only child. After the baby died we had kept it up in a mechanical sort of way, pretending there would be other children some day. To my husband it was another collection, to be made as impressive as possible; it embarrassed him that I actually enjoyed reading the books. After he left I continued to add to the collection and began writing about the books. I was asked occasionally to lecture on the subject. Once or twice a year I still enjoy traveling and speaking to college students. They are a responsive audience; it affords them some comic relief, no doubt, to hear the Babar books presented as Utopian novels.

One lecture last winter was in Oregon. There had been a pleasant, if somewhat ordinary, dinner at the home of a professor of communications theory. The lecture – "Children's Literature, A Place on the Shelf" – had gone well. The weather was dreadful, as usual. Afterward I rented a car to drive out to a motel on the coast at Florence, where a year ago I had spent a pleasant weekend with a violinist friend. My throat had been sore after the lecture, but I attributed that to the speaking and the communications professor's dry wine. After an hour or so of driving, however, my back became unbearably painful; my neck was stiff, my head throbbing, my eyes burning and streaming as if from hay fever. My clothes were damp with sweat, and I began to shake uncontrollably. What a time to come down with flu. The rain beat on the car. I had driven so long without seeing lights I worried I had taken a wrong turn. I became truly frightened when I realized that the road was now unpaved; a pitted gravel track, it bumped and wound through an endless forest of dripping trees, up and down steep grades and switchbacks. In panic, I drove on, fevered, afraid to stop. It must go somewhere, it must go somewhere, I told myself. The first light I see I'll stop. Strange figures waved and stumbled in my headlights, dwindling into stumps and shrubs as I passed.

Finally, miraculously, there was a light. A yard light, a driveway, a pen of ducks with a small pond and a shelter. A neatly trimmed hedge, a lawn, a well-pruned rose garden, bare now in the winter storm. And a house – a cottage it would be called in England – a mossy stone house with broad chimneys and a slate roof. I sat and stared through the windshield. A slate roof? In Oregon? My head buzzed. A dog barked. The ducks in their shelter lifted their heads from their wings and stared into the headlights with small eyes. A light flashed on in one window. I felt a great wave of relief and opened the car door. My legs were so weak I could barely command the strength to get out of the car. I staggered to the house. The door opened as I fumbled for the bell, and someone caught me as I fell.

"Who is it, dear?"

"I don't know. But help me bring her in. She's sick."

"My god, she's soaked."

"And burning with fever. Here, in the spare room . . ."

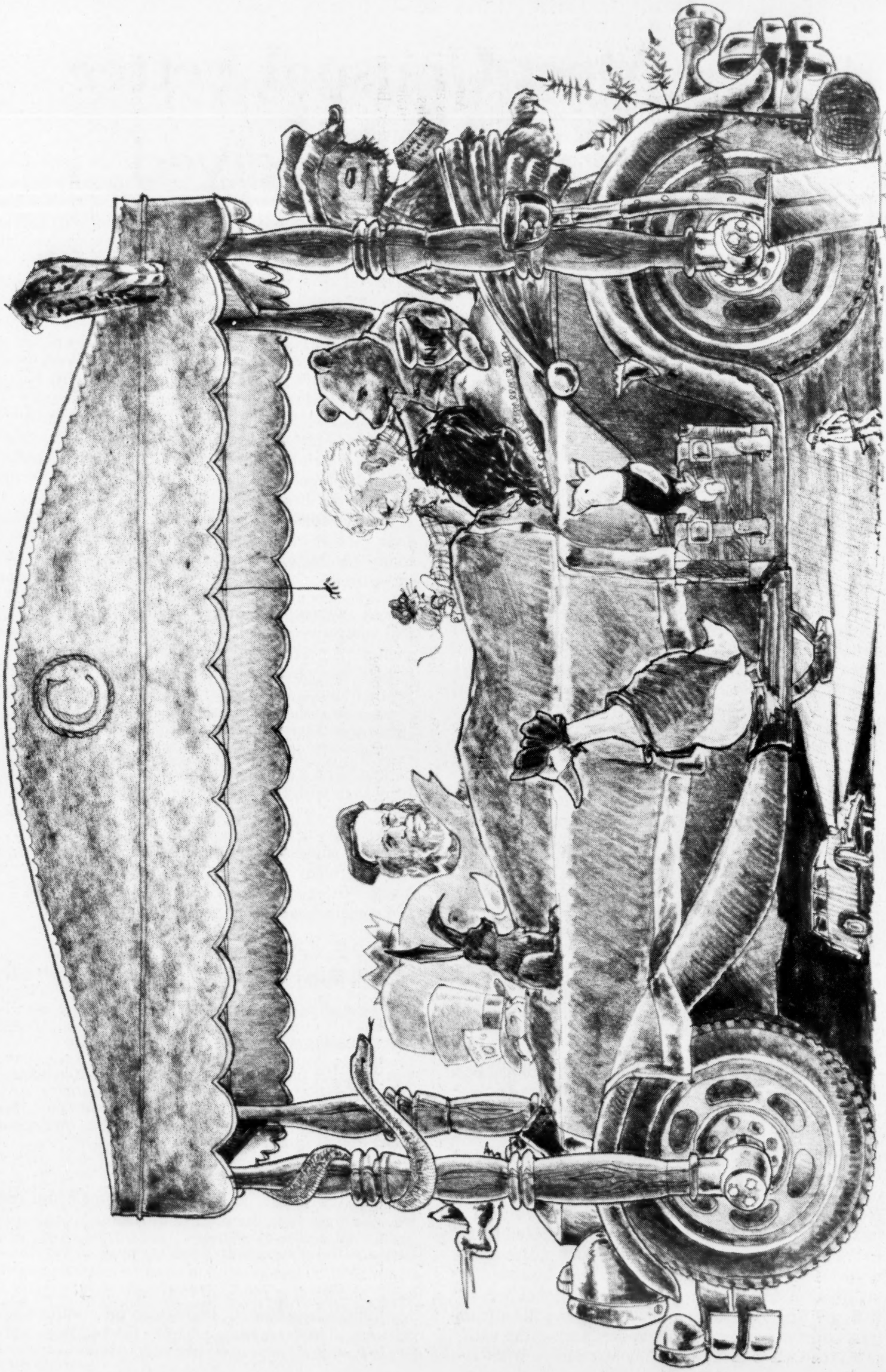
Warm, gentle hands undressed me. The cool sheets were a shock.

"Here, a warm towel for her back. There. And a wet cloth for her head. How awful, she must have got lost, so sick and in this storm . . ."

"You stay with her, dear, while I fix some broth and tea. We'll get something warm into her . . ."

I tried without success to open my eyes, to see this benevolent couple who ministered to me, bringing quilts and holding my head to trickle warm liquids down my aching throat. I sank into the comfortable mattress. The fever heat spread to the bedding, and I slept.

[more →]



Box 428, Sausalito, California 94965

I woke later in a spasm of chills and trembling. A shawled figure rocked softly in a rocking chair by the bed, her face in shadow. A candle flickered on a small stool next to a still-steaming cup. The light flashed and blotted on the backs of books that lined the room; shelf upon shelf of books, broken only by the windows and the door. Most astonishing, at least half of them were children's books, mixed at random among an untidy collection of great literuature. On top of one shelf a stuffed figure – Piglet perhaps – lay on a dusty violin case. I lay and stared in surprise and delight at meeting old friends in the wilderness. The shawled figure rose and placed a cool hand on my forehead.

"Are you amazed at the books?" Her voice was soft, as if afraid of waking someone. "They were our son's. He was killed in Vietnam six years ago. He kept all his favorites for his own children. Now of course there will be no children, but we keep the books . . ."

I stared at the books, ponderously sorting this information. Many of them had been published in the last six years; so they continued to collect them, too. A son. I tried to speak, to tell her of my own son, whom I had held but once in his brief lifetime. So alive and perfect a thing to lose. But to have raised him through the colic, the teething, the Christmases, the fears of the dark, to have built the person who shared this house, these books – I sobbed and the woman comforted me, wiping my forehead with a cloth. I slept again.

Later, the smell of tobacco smoke wakened me. The husband sat in the rocking chair now, reading by the candlelight. He brought me more tea and moistened the cloth on my forehead again.

"Does the smoke bother you?"

I shook my head. I actually liked the smoke; there was something reassuring about it. I tried to tell him how grateful I was to them, how lucky I had been to find their house.

"You like it? We built it ourselves. Long ago we saw a house like this in Dearborn. An old Cotswold cottage and smithy that Henry Ford imported stone by stone from England. He even imported the workers to assemble it. When we finally came to build our own house we modeled it on our memory of that place. We did all the work ourselves, and we ordered seeds from England to plant here. We had hoped to clear more land and farm it, but now we're getting old . . ."

He sat, rocking and smoking, staring at the careful woodwork of the beams and window frames. All night I woke and slept, and always he or his wife was there, ready with a drink, a towel, a word of comfort. It was a long night. I woke at last to shafts of sunlight pouring through trees whose tops soared and vanished in mist outside the window. The room brightened as the mist lifted, and suddenly the room – the house, too, and forest – boomed with the opening of Bach's Magnificat.

I was too feverish now to be surprised. I lay awash in sweat and music.

"Do you mind the music?" The woman bent over my head. "Our son was a musician. This was a favorite piece of his. If it bothers you, though, we needn't play it this morning . . ."

I tried to smile, to tell her how perfect it was. She moved into the next room and stood by the window with her husband, silhouetted against the mist and sunlight. This must be the way they begin their day, I realized.

The voices began, each clearer than the last. The walls receded and the ceiling soared in a succession of vaults. In tier upon tier of galleries the singers stood, and I recognized them all. Wordsworth with an armful of flowers. Coleridge looking guilty about something. Shakespeare, Huxley, Beatrix Potter with a hedgehog in a wicker cage. Joyce, the Brothers Grimm, Ola and Blacken. Harold drawing windows on the wall with a purple crayon. The Frog Prince, Hans Andersen, Homer, Euripides, Marx, Frog and Toad hunting for buttons. Brecht and Little Bear arm in arm, wearing fur hats. Faulkner, Sam Pig, Walter Mitty, Peter Rabbit, Virgil, Lassie. B.F. Skinner launched Gayneck from outstretched hands; the bird soared in circles, higher and higher, past more and more singers. The Swallows and Amazons with a jug slung over an oar. Lucretius, Richard Scarry, Hugo and Josephine. In a row on a railing stood the little folk, Arrietty and Spiller holding hands, Stuart Little, Josephine the Singer, the schoolmaster with his people from Mistress Masham's Repose, Nils astride Morten Goosie-Gander, Thumbelina, Tom Thumb, Mopsa the Fairy, Peter Peabody Pepperell III and Gus the gull.

The faces and the music were all so clear. Ishi stood alone. Melville, Tin-tin and Snowy, Farley Mowat, Pogo, Dido and Simon, Huck Finn, Marcuse, Voltaire, Eloise, Mike Mulligan. The Bastables shifted uneasily on their feet – peas in their shoes again, perhaps. Rabelais, the Tin Woodman, Bertrand Russell. Laura and Pa with his fiddle. Thoreau, Henry Miller, Charlie Bucket, Ezra Pound, Dickens, Beckett, Whitman. Among them stood the animals, singing too: Amos and Boris, Tracy's Tiger, Freddy the Pig and Mrs. Wiggins, the lively little rabbit, the poky little puppy, Mrs. Oldknowe and the green deer, Babar and Zephir, Curious George, Pooh, Eeyore, Mr. and Mrs. Mallard, Ping, the Snow Goose, Nicholas Nye. In a corner next to Mrs. Malone a kid in a diamond-patterned sweater bent to tie a broken sneaker, The Tomten, Mr. Biswas, Johnny Tremain, Mowgli, Branwell and the Twelves, the White Knight, the Jumblies, Bambi, Max in his wolf suit, John Clare. Tasha Tudor with a baton led a band of singing Corgis.

"Deposuit potentes de sede et exultavit humiles."

Rank upon rank they stood and sang. It was not an irreverent vision. I wept again, suddenly and feverishly homesick for someplace too far away to recall. The music ended and the sun burst unbearably on my eyes.

"Here, it's too bright. It hurts her eyes . . ."

". . . fever . . . all night . . . doctor . . ."

[more →]

The curtains closed mercifully. I slept again.

I woke in the familiar whiteness of a hospital room. There were no books. The nurses were professionally cool. I had only to lie passively and recover. The nurse looked at me oddly when I asked about the people who brought me in.

"Oh, they're OK. Paid your room, so's you wouldn't be treated like welfare."

I took the hint and reached for my purse to dig out insurance cards. Everything was tiring. I slept and woke.

"Are we up to having visitors this afternoon? It's the fellow that brought you in."

Finally I was to meet my unknown benefactors. But no. She ushered in a kid wearing baggy overalls. He had a scraggly beard and long hair, which curled from under a dirty, loose-knit tam-o-shanter. He wore a row of ball-point pens clipped to the pocket of his denim shirt. He introduced himself, holding out a crusted hand. There were furrows between the long muscles of his arm. "They said you were awake so we thought we'd see how you're doing. You sure look better than when we found you . . ."

"Found me?"

"Yeah. You were really out, you know. You must of got lost up on the old logging roads. You were lying in your car there at the end of the road by a unit in Alsea we're planting. That's where we found you."

"We – ?"

"Hoedads. Tree planters." He grinned and perched comfortably on the foot of the bed, knocking dry mud off his cleated boots before resting them on the frame. "You don't come from around here. Say, I parked your car in the lot. Rented, isn't it? You're low on gas. Had her running all night, I guess – lights were on, too, and your door was open. The nurse says she got your clothes dry OK, though."

He explained about the Hoedads, as you have told in your articles. We talked of labor-intensive agriculture and forestry, economics, the second law of thermodynamics, decentralization, child-rearing, sun-worship and vegetarian diets. It was exhilarating. Like playing tennis with someone better than yourself, I found I remembered and understood much that I hadn't given thought to in years. He pointed out the window at a truck in the parking lot. A small boy sat in the driver's seat, pretending to drive it. A woman dressed in the same overalls and denim shirt stood next to it with another man wearing an old fatigue jacket and a cowboy hat. A child sat on his shoulders, waving a pinwheel. The side of the truck was emblazoned with gaudy letters, like a carnival van:

CHEAP THRILLS
Fast, deep, and often
Reforestation

I glanced back at him, and his eyes twinkled. Nice blue eyes behind all that grubby beard.

"We all got our own names," he said. "Each crew, I mean."

I laughed and choked, and he slapped my back. I tried to explain what had happened to me in the night: the stone house, the ducks in the yard, the solicitous couple, the vision of the singers, how real it had all seemed. He listened, his eyes wide with interest.

"Yeah, I can believe it. You know once when I was at Yale – "

"Yale!"

"You mean you can't tell?" He looked pleased. "Usually people spot it – the way you talk or hitch up your socks or something – it takes years to get rid of it, like a disease. Well, once when I was there I got so drunk at the Harvard-Yale game I passed out in the men's room at the stadium and got locked in there. I woke up in the pitch dark – I mean I didn't know there could be darkness so dark, it was like absolute nothingness. I couldn't tell if my eyes were open or shut. I was lying there on a damp concrete floor and there was this terrible smell. I thought I'd been buried alive. All of a sudden it seemed as if I could remember the whole thing – the doctors, the stethoscopes, my parents weeping, the hearse ride, the coffin lowered into this grave. I really remembered it, every bit. I tried to yell but my throat was too dry. I put my hand out and it landed on the slimy wall of the urinal – ugh! Stygian, I can tell you. I couldn't think what it was. Then I thought I was blind . . ."

"But what did you do?"

"Figured it out finally, and got to thinking about the Harvard man and the Yale man taking a leak – you don't know that one? – the Yale man says, 'At Yale they teach us to wash our hands after we urinate.' And the Harvard man says 'At Harvard they teach us not to piss on our hands.' I laughed so hard thinking about it I got sick. I sobered up finally and felt around for a window and climbed out. I didn't do a whole lot of drinking after that . . ."

He stood up. "Well, I'm glad you're OK. We're movin' on to a new unit tonight. I can fill your tank for you, though, before we go. It's a gypsy kind of life . . . " He paused in the doorway. "You know, it all seems so real because it is real, the music and everything, it's all part of what you know already. You really thought you were in a cathedral somewheres when we found you. And on the way in you said something really far out."

"I did?"

"Yeah. I remember it, it was so far out. You sat up all of a sudden like and said, 'Oh god, I have lived too long in cities of the West.' Loud and clear you said that, and then you went to sleep again." He smiled and held up his hand. "Well, take care, Mother."

I spent the rest of that hospital stay with a collection of real estate catalogues. In what strange ways we make our new beginnings!

C. Scott Van Strum
Tidewater, Oregon ■

[Greywater continued from p. 72]

WAYS TO GO ABOUT RE-USE

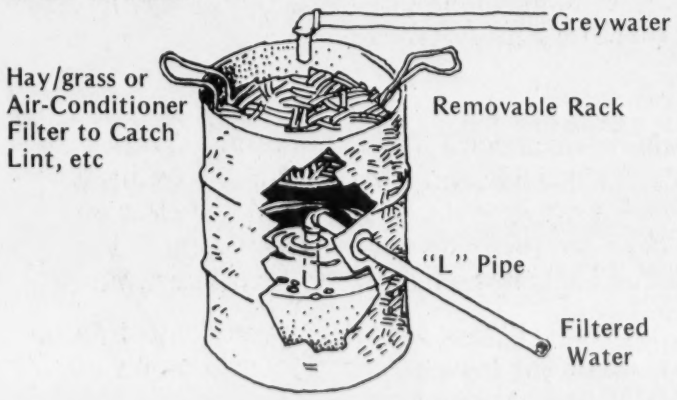
This article will only describe on-top-of-ground re-use of greywater. Underground use (shallow drainfields) are just like septic tank drainfields. More info can be obtained from Septic Tank Practices (Box 42, Elm, Bolinas, CA 94924; $3.00), or United Stand ($1 ppd, P.O. Box 191, Potter Valley, CA 95469). Aqua-saver, (P.O. Box 752, 2855 E. Coast Hwy, Corona del Mar, CA 92625) produces a pre-packaged recycling unit for greywater. The unit can be used for using greywater in the toilet tank as well as lawn irrigation. I am interested in any of your home-grown solutions.

If you can get to your plumbing, disconnect all the fixtures (except the toilet) from the septic tank or sewer. To repeat, the kitchen sink should either go into the septic tank or sewer or be collected separately. All the greywater must be filtered (see below).

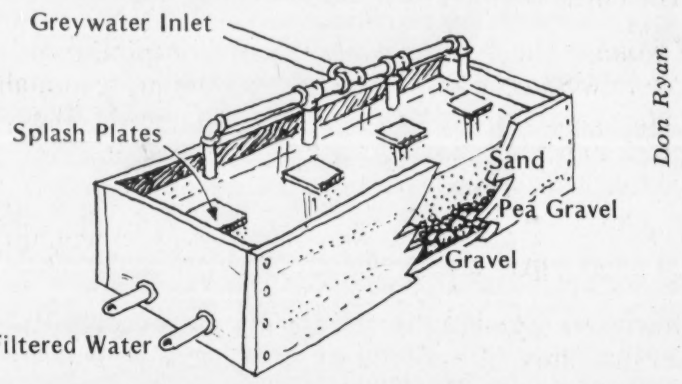
The easiest way to re-use greywater is immediately. Before you use the dish or clotheswasher, put the hose exactly where you want to flood irrigate. Switch the hose to a new place when you bathe or shower.

STORAGE: It is best to empty most of the greywater from storage each day. This prevents the greywater from going septic, smelling and attracting flies. The storage tank should be able to contain twice your daily output of greywater. If you are high above the ground, just feed the greywater through a filter into 55-gallon drums with a hose attached. If your plumbing is too close to the ground, feed the greywater through a filter into sunken drums or other kinds of tanks. From that "well" you should pump at least once a day.

FILTERS: There are all kinds of filters available. You can use a part of a bale of hay on a rack and compost the hay each week (otherwise it will go septic). You can use old rubberized horsehair (air conditioner filters) – very cheap and doesn't need as much rinsing with clean water. You can use a sand filter as illustrated and rake off the top two inches of sand every week or two to get rid of the lint and other gunk. You can buy a commercial greywater filter from Clivus Multrum, 14 A Eliot Street, Cambridge, MA 02138. You can use a commercial filter or diatomaceous earth filter which are usually used for swimming pools, but these are expensive and harder to clean.

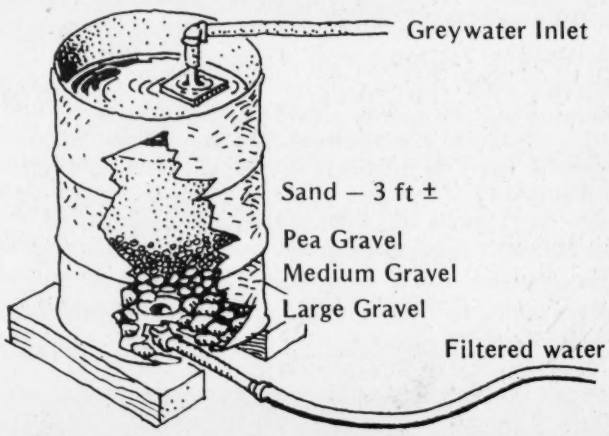


Rack is removed frequently and old hay filter material put in compost pile. Air conditioner filter needs washing with clear water every once in a while.



Don Ryan

Bed sand filter in redwood box. Tops of all filters need to be covered for protection from rain and litter.



The greywater can be evenly distributed to all tanks, or the tanks can be used in alternation. Scum layer must be removed from top of sand layer. System needs downhill gravity disposal.

PUMPS: It all depends on how much work you want to do, how much you can afford, and how much greywater you will have each day. Unfortunately, manual pumps are just as expensive as electric pumps. The best manual pumps are seaboard sump pumps (diaphragm-type). They'll pump just about anything since they were designed for ship bilges.

If your greywater is filtered well (through a sand filter), there are 200-gallons per hour (gph) drill-driven self-priming pump kits (about $6.00). You must have your own electric drill and not run the drill too long or it will burn out. Again, water must be filtered first or clogging will definitely occur.

There are all kinds of small centrifugal pumps ranging from $28 to $125 depending on the amount you need to pump. Sears makes a good submersible pump (500 gallons per hour) for about $40.00.

A pleasant way to pump greywater is with an automatic float switch. For not too much more money, these pumps will go on and off by themselves – automatically pumping. You set the hose where you want it and can leave the house without having to run back to make sure the "wet well" is not overflowing.

NOTE: Horsepower is not the most important aspect of pumps. It depends on how far you will push the greywater and how high you have to pump out of the wet well. Usually 1/4 to 1/2 horsepower will get you a non-pressurized flow of about 150 feet of garden hose.

HOSE: You can increase the distance from the pump and also decrease the chances of clogging by using a larger hose. Garden hose is 3/4". Try finding cheap 1-1/4" to 1-1/2" hose that is flexible. Next issue will have more on ways to irrigate cheaply with drums and special hose settings. ■

Earthworm Technology

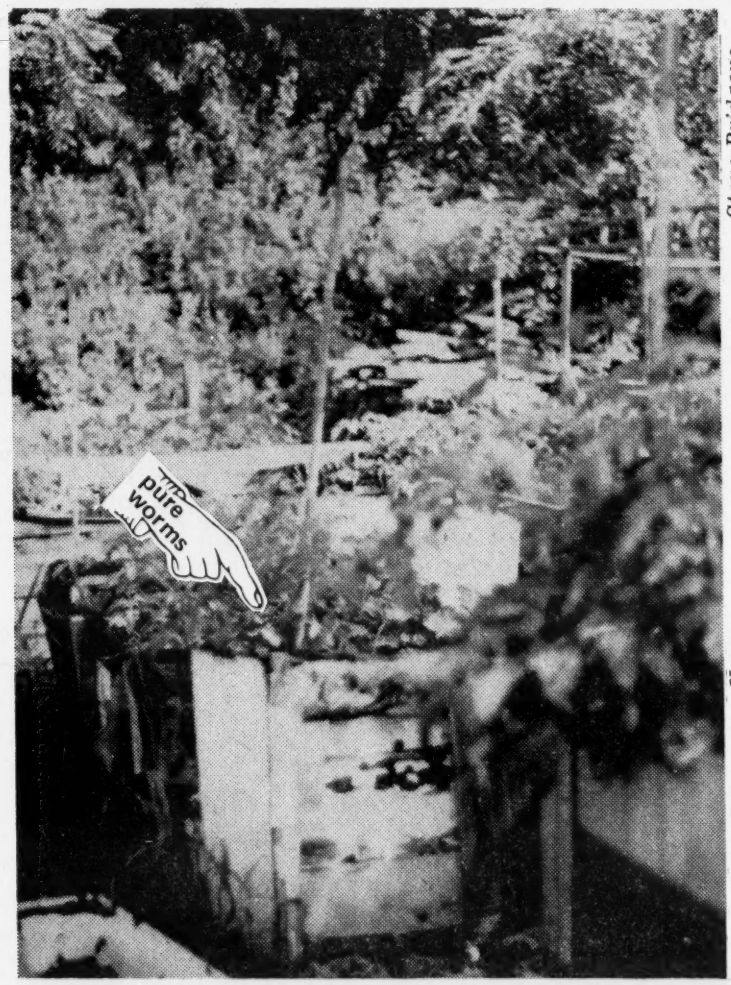
by Rosemary Menninger and Steve Bridgens

"The soil is your last source of entertainment."
—*Robert Mozibuku, Zulu farmer*
(from old Organic Gardening & Farming)

Worm farming for fun and profit is a commercial come on that has spawned an explosion of worm-fascination. Earthworms are attracting the attention of compost hobbyists and small-animal freaks. Worms are becoming for some an avenue into aquaculture, greenhouse gardening and soil development.

The new worm people are just beginning to get acquainted out there on the fringes of the worm farming business. Friends of Invertebrates is a new organization, combining Earthworm Technology, of Kansas City, and the Krewe of Kraw, a New Orleans crawdad bunch who fancy crayfish farming but are mainly a wild party group.

The earthworm farmers of the past decade have been disillusioned chinchilla growers and other semi-rural people with extra space and tight money. Kansas turned $6,000,000 in live fishing bait last year, virtually all from back yard wormers. It's a buy-back system with wholesalers selling worms to an individual and buying back eight times the number six months later.



Steve Bridgens

Turners Bait, Lawrence, Kansas.

Friends of Invertebrates & Earthworm Technology
c/o Steven H. Bridgens
603 Greenway Terrace
Kansas City, Missouri 64113
(816) 363-1466

The Formation of Vegetable Mould, Through The Action of Worms
Charles Darwin
1969 (1880 orig.)
$4.00 postpaid
from:
International Publications Service
114 E. 32nd St. NY 10016

A classic

Many hobby-size worm operations are expanding to serve the gardening market. People interested in buying garden worms should know that a good worm farm is like a good seed company: it takes a high quality operation to raise a healthy product. A big commercial wormer is likely to sell sickly worms all ready for the fishhook.

Good local garden worms can often be purchased from a small grower through Earthworms in the yellow pages, or from a mail order business. Two small, reliable firms are:

Gold Coast Bait Farm
Rt. 1 Box 1206
Bandon, OR 97411

Carter Worm Farm
Plains, GA 31780

They'll send a pricelist, which doesn't run more than $1.50 - $2.00 per pound, or $12 per 2,000 worms. In general, buying by the pound is safest; when buying by count it's hard for the grower to estimate worms in thousands so the buyer is often shorted.

Worms can adapt to a variety of conditions, they can even freeze and revive, but they are quite sensitive to chemicals in the soil and air. Adequate ventilation is essential for worms raised indoors if they are to survive at all. Healthy worms reproduce every two months, and 50,000 of them can digest a cubic yard of soil per month. A large bed of worm castings grows a dynamite garden.

[more →]

Harnessing the Earthworm
Thomas J. Barrett
1959
$2.95 postpaid
from:
Wedgewood Press
P.O. Box 68
Boston, MA 02117

Pleasure reading for worm lovers

What Every Gardener Should Know About Earthworms
Henry Hopp
1972
$1.50 postpaid
from:
Garden Way Publishing Co.
Charlotte, VT 05445

Worms in the garden

Pets In a Jar
(Collecting and Caring for Small Wild Animals)
Seymour Simon
1975
$5.95 postpaid
from:
The Viking Press
625 Madison Ave.
New York, NY 10022

Excellent kid's book, with a section on worm raising

The Worm Forgives the Plow
John Stuart Collis
1973
from:
Penguin Books
7110 Ambassador Rd.
Baltimore, MD 21207

General philosophy and role of worms in the eco-system

Profitable Earthworm Farming
Charlie Morgan
1975
$2.50 postpaid
from:
Shields Publishing Company
Box 472P
Elgin, Illinois 60120

Complete manual of worm production, storage, selling and shipping.

Some worm enthusiasts are beginning to see soil and worms as one and the same and are developing techniques for growing vegetables in beds of pure worms. Outside Lawrence, Kansas, Turner's Worm Farm produces enough melons, tomatoes, beans and peas, all grown in 1/4 acre of worm bed, to fully stock Turner's Produce Market. Turner grows his plants in pure worms, with trellises for the vines to climb up ouf of the slimey masses. The best of the yield is picked for the store, the rest fall off the vines to rot and be digested by the worms, with seeds of the rotting vegetables sprouting anew. Turner feeds the worms newspaper, cardboard and garbage and sells sacks of the worm casings in his store.

Turner's friends see various applications for his dramatic model. "Closed soil gardening systems," and "solid waste disposal through earthworms" are their catch-phrases for some interesting possibilities. For instance, small city composting programs can partially support themselves by selling compost. Raising worms would speed the composting process and create another saleable commodity for gardeners and fishermen and gradually enrich the soil of the city.

Worm bed gardens make more sense than hydroponics: the worms themselves are a rooting medium so no pebbles or synthetics are needed; and you throw in paper and garbage instead of expensive chemicals. It's a case of high tech versus slime and shit, with the latter producing the more nutritious vegetables.

"From dung they come, on dung they feed, in dung is their life and their delight," said Erasmus, and from Shakespeare: "Men have died from time to time and worms have eaten them, but not for love." (Merchant of Venice.) ■

Facts About Worms

- A mature breeder can produce an egg capsule every 7 to 10 days.
- An egg capsule will hatch in 14 to 21 days.
- An egg capsule will hatch 2 to 20 baby earthworms with an estimated average of 7 per egg capsule.
- An earthworm will mature to breeding age in approximately 60 to 90 days provided they receive proper food, care and environmental quality.
- One breeder can produce 1200 to 1500 worms per year.
- Two thousand breeders can produce 1,000,000 in one year or 1,000,000,000 worms in 2 years.

Principles of worm-culture:

1. Compost a soil-building earthworm food.
2. Add water and worms or earthworm egg capsules
3. Keep wet and let nature take its course.

Drip Irrigation

by Rosemary Menninger

Drought-stricken regions of the West and Midwest will be experimenting with various water conserving methods for agriculture this summer. Drip irrigation is one option that has been proven economical in terms of water and money, particularly for orchards and vegetable gardens.

Here in Marin County, California, where emergency water rationing has already begun, a community garden at the Fireman's Fund Insurance Company has installed a drip irrigation system costing only $30 for a 750 sq. ft. area.

A system of this kind will water a moderately large back-yard garden with 5 gallons in 15 minutes. Complete watering, without supportive mulching, would require only 4 hours once a week, or a total of 80 gallons a week (80 gallons is the capacity of an average home water heater, or a bathtub filled to the brim).

The system starts with a restricter valve cutting down the water pressure at the main bib (outlet); attached to this is a filter, blocking particles in the water that could clog the fine tubing of the system. A small reducer joint connects the filter to the 3/8" line, which takes the water to the garden beds. A T-joint forms a right angle, sending another length of 3/8" line alongside the plants. Small holes must be drilled into both sides of this line with a 5/64" drill bit. One end of the spaghetti-like micro tubing (.020 - .040" diameter inside) snaps into these holes, the other end going into the ground near the plant. A lettuce plant would require only one tube at its roots while a large tomato plant needs three.

An even water pressure is maintained throughout the system by making the micro tubes closest to the main bib long, coiling them if necessary, and shortening the lengths of tubing that are farther from the bib, or uphill from it.

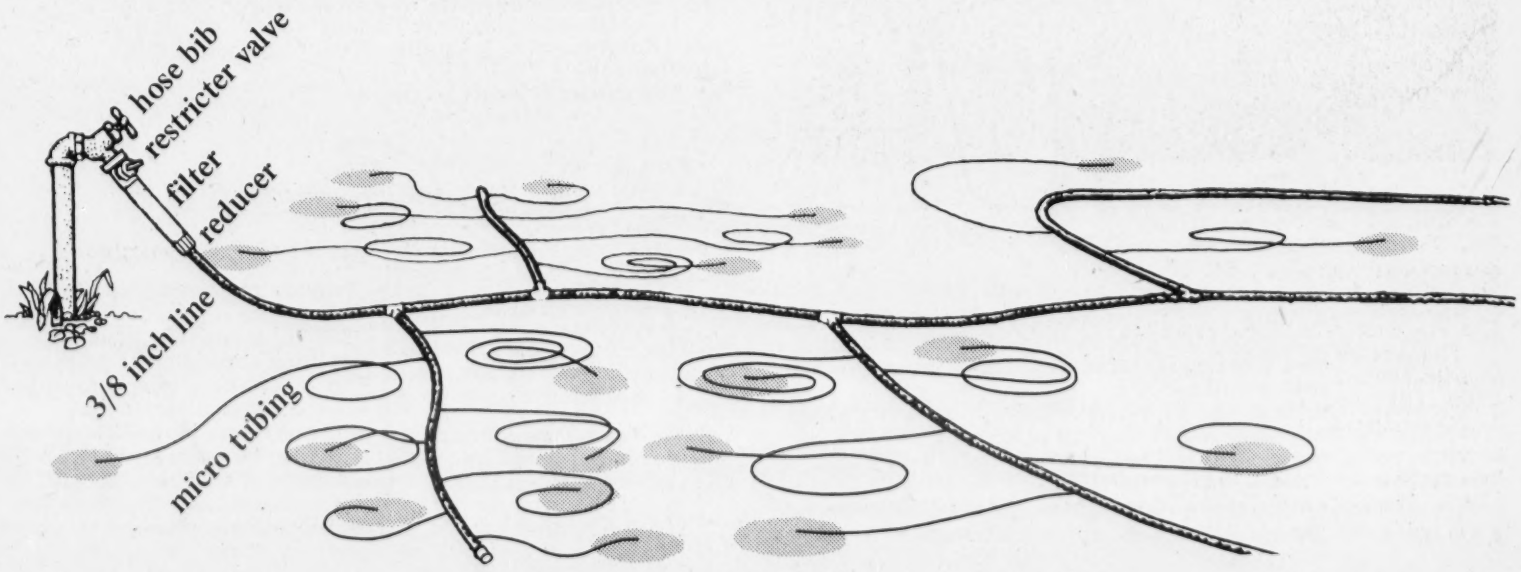
Equipment and information can be obtained from:

Jan Davis, Davis Here Nursery
135 Mt. Whitney Court
San Rafael, CA 94903

Other sources of equipment are:

East Side Irrigation
3027 N. Harrison
Fresno, CA 93705

Incline Plant Products
P.O. 419
Grass Valley, CA 95945 ■



The living BASICS from the UN

Dear Sirs:

I am pleased to send you Volume 2 - Home Techniques, Series 1 - Labour Saving Ideas, produced by the Food and Agriculture Organization of the United Nations, as you requested in your letter to me of 8 June 1976. I have also enclosed photocopies of some of the illustrations to be included in the next five volumes. The complete list of materials which have been published or are planned for publication in the next few months is:

Home Techniques
Volume 1/Food Preservation (FPR) - Series 1
2/Labour Saving Ideas (LSI) - Series 1

Rural Home Techniques
Volume 3/Food Preparation (FPP) - Series 1
4/Labour Saving Ideas - Series 2
5/Food Preservation - Series 2
6/Labour Saving Ideas - Series 3
7/Household Furnishing & Equipment (HFE) - Series 1

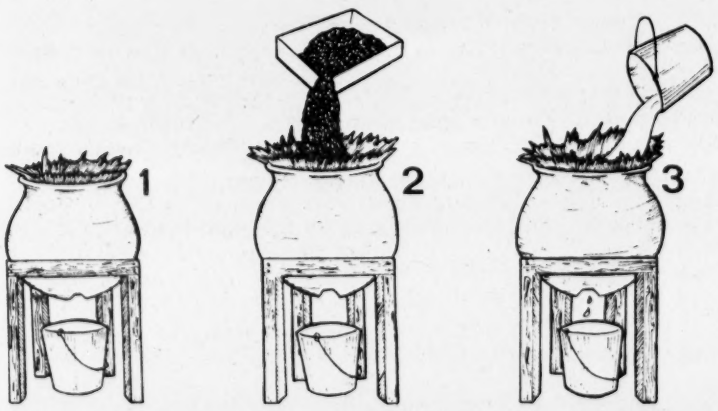
Please note that the volume titles beginning with Volume 3 will be called Rural Home Techniques instead of Home Techniques.

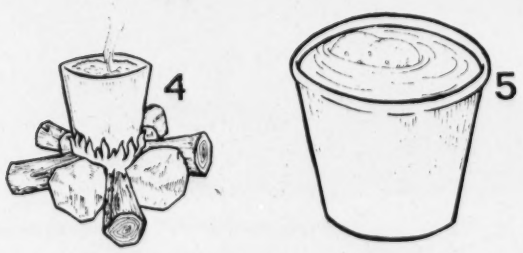
This series of publications is to be priced at $4.00 per folder. Requests may be addressed to the FAO sales agent for North America, UNIPUB, Inc., 650 First Avenue, P.O. Box 433, New York, NY 10016.

Thank you for your interest.

Thomas Laughlin
Rome, Italy

All illustrations here are from **Vol. 2, Home Techniques, Series 1, Labour Saving Ideas**. *Instructions are provided in English, French, and Spanish.*



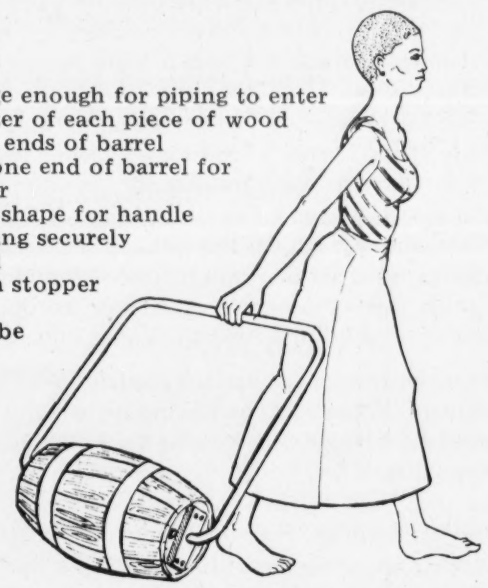


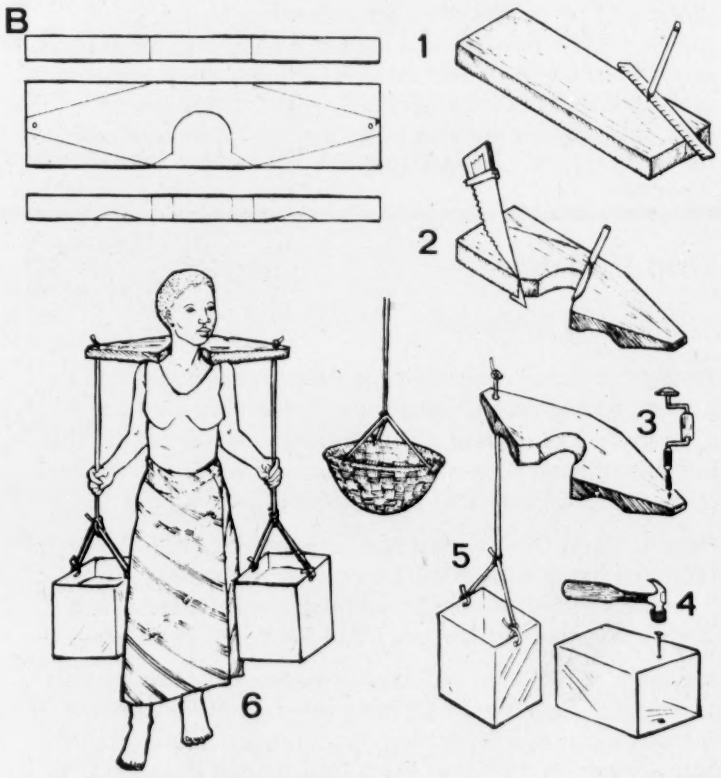
MAKING LYE

1. Elevate ceramic pot onto the wooden frame and place the bucket directly under the hole in the pot. Line the pot with straw or other filtering material.
2. Fill the pot with wood ashes
3. Scoop out a hole in the wood ashes and add as much water as will fill the hole. Add water daily as it is absorbed
4. After three weeks remove the bucket containing the lye. Boil the lye
5. Test the lye with a raw potato. If the potato floats the lye is ready for use.

WATER ROLLER

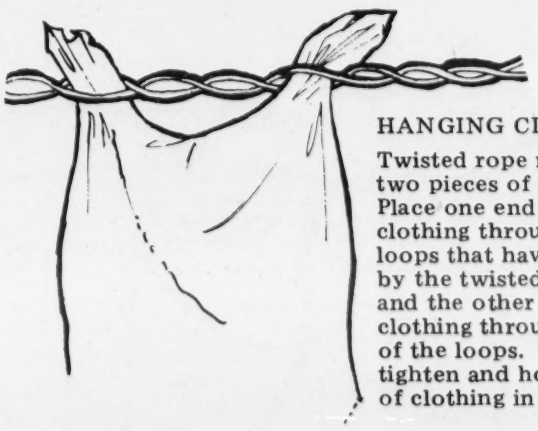
1. Drill holes (large enough for piping to enter and rotate) in center of each piece of wood
2. Screw wood to ends of barrel
3. Drill a hole in one end of barrel for filling it with water
4. Bend piping to shape for handle
5. Fit ends of piping securely into holes in wood
6. Fill barrel, then stopper tightly with bung
7. The barrel can be rolled away





SHOULDER CARRIER

1. Draw the outline of the water carrier on the board
2. Saw the board into the correct shape and carve out the areas for the neck and shoulders
3. Drill a hole through each end of the board large enough to thread the rope through
4. Drill or punch two holes in opposite sides of the containers at approximately 5 cm (2 in) from the top
5. To each container fasten a short length of rope through both holes forming a handle. Attach to carrier using another rope
6. The carrier is ready to use.



HANGING CLOTHES

Twisted rope method. Twist two pieces of clothesline. Place one end of a piece of clothing through one of the loops that have been formed by the twisted clothesline, and the other end of the clothing through another of the loops. The rope will tighten and hold the piece of clothing in place.

Appropriate Technology Sourcebook

"The idea behind the Sourcebook is to provide access to practical plans and books on village technology, small community technology, and alternative technology – materials currently in print only. We wanted to enable a reader in Indonesia, for example, to find material of value and relevance, and know something about what he/she was going to get before laying out the rupiahs to get the pubs. In that country, for example, $10 represents a month's salary for a field worker. You're careful what books you buy under the circumstances! Well, the book has been well received – it is being used in more than 80 countries and every state in the U.S."

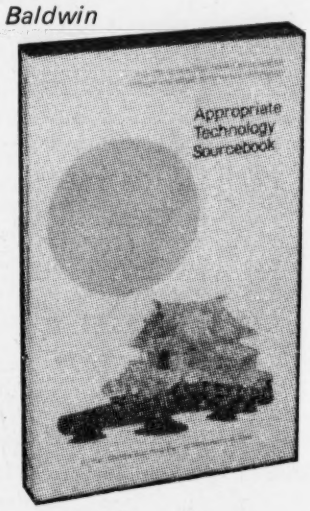
–Ken Darrow

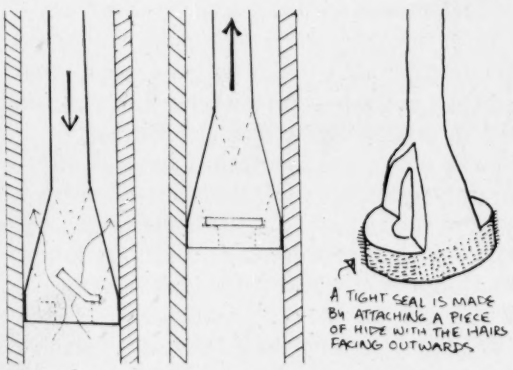
This is the best AT bibliography for those who are actually getting their hands dirty, and it's a fine bargain at the price, too.

–J. Baldwin

Appropriate Technology Sourcebook
Ken Darrow and Rick Pam
1976; 304 pp.
$4.00 postpaid

from:
Appropriate Technology Sourcebook
Volunteers In Asia
Box 4543
Stanford, CA 94305





This is a water pump with a piston made entirely out of wood, except for a small piece of old rubber tire that serves as a flap valve. The outer cylinder can be steel or iron pipe, bamboo, or a hollowed out log. This kind of pump is used on the small boats operated by the Bugis sailors of Sulawesi, Indonesia. The pumps are about four inches in diameter, and are used to pump water out of the hulls, a distance of 3 to 4 meters. We have no figures on the volume of water this kind of pump can lift in an hour, but they are surprisingly effective.

Economically Appropriate Technologies for Developing Countries

Bibliographies usually don't make Book-Of-The-Month, but this one is so well annotated I read it from cover to cover! The subject matter is one of those "coming things" that isn't quite in the everyday public eye yet. Dr. Carr's fine work should help.

–J. Baldwin

Economically Appropriate Technologies for Developing Countries
(An Annotated Bibliography)
Dr. Marilyn Carr, compiler
1976; 101 pp.

$7.25 airmail
from:
Intermediate Technology Publications
9 King St., London WC 2 E 8HN England

Cabanos P., *Jeepney Manufacturing in the Philippines: A Model for Developing the Agricultural Machinery Industry*, Agricultural Mechanization in Asia, Autumn 1971.

Describes how the 'jeepney' industry started in the Philippines after World War II, based on a preponderance of cheap surplus material and a great need for public conveyance. The jeepney is a low cost, simple vehicle based on a re-conditioned engine (in 1971, a jeepney capable of carrying 12 persons cost $1,600). As soon as the concept was developed, small shops producing crude versions cropped up almost overnight, and the industry has flourished to such an extent that annual sales in 1971 had reached 17 million dollars. Gives details of two large companies which started from scratch in the 1950's using simple tools.

The Jensen Hand Pump (A.T. Unit Report No. 6), leaflet, 8 pages, small charge for postage, from Appropriate Technology Unit, Christian Relief and Development Association, P.O. Box 5674, Addis Ababa, Ethiopia.

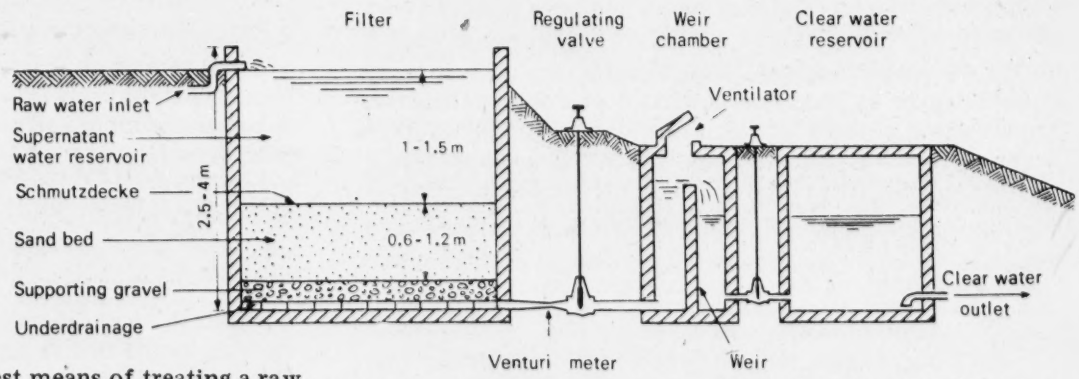
This report introduces a remarkable, easily-built hand pump being tested at the National University of Ethiopia. It consists of a length of pipe with a foot valve, but no inner moving piston. The upper end of the pipe hangs on a spring, and has a handle attached. As the pipe is pushed up and down the water comes out the top.

The pump is self-priming and high lifts are theoretically possible. Construction is simple, requiring only basic plumbing and sheet metal work. "A simple foot valve appearing to give satisfactory service is a rubber disc (minimum of 2mm thick) seated against a steel plate in which 5-10mm diameter holes have been drilled." This foot valve is easily locally made.

In a test, a 4-inch diameter pipe pump operated by one man at a lift of 6.4 meters and 75 strokes a minute had an output of 245 liters/minute. Under roughly the same conditions, a 2-inch diameter pipe pump with a commercial foot valve could only lift 45 liters/minute (demonstrating that the home-built valve is better adapted to the design).

A good description of the pump, but no drawings are included. A fascinating idea.

FIG. 1. DIAGRAM OF A SLOW SAND FILTER



Slow Sand Filtration, book, 115 pages, L. Huisman and W. Wood, 1974, $7.40 from WHO regional distributors; or from WHO Distribution and Sales Service, 1211 Geneva 27, Switzerland.

The slow sand filter is one of the best means of treating a raw water supply where specialized chemical technology is not available. Far from being an old-fashioned technology, the authors feel that the slow-sand method can be the cheapest, simplest and most efficient method of water treatment.

Several scales of design are discussed and illustrated, although knowledge of basic engineering mathematics would be helpful. The last part of the book discusses the use of sand filters for recharging ground water, an important consideration for arid areas. In areas of known biological contamination, however, the use of chemical treatment (chlorine or preferably iodine) along with sand filtration would provide a very safe water supply.

Slow sand filtration methods are also very simple to operate: "Provided that a plant has been well designed and constructed there is little that can go wrong as long as the simple routine of operation is carried out."

A very valuable book for those involved with planning water supplies for small to medium size communities.

Appropriate Technology

The upper case against

BY WITOLD RYBCZYNSKI

The other day it hit me. The key. They always refer to it not as an appropriate technology, but as Appropriate Technology. The big A and the big T, sometimes AT.

Do you remember the Air Force general, Jack D. Ripper, played by Sterling Hayden in "Dr. Strangelove?" When he raved about the Vital Bodily Fluids, you knew instinctively it was capitalized. It was capitalized because you knew that it had achieved, at least in Ripper's mind, the stature of True Belief. There it is again! In simply altering a lower case to an upper case, we go from experience to belief, from catholicism to Catholicism, from art to Art, from a great society to a Great Society. And, from an appropriate technology to Appropriate Technology.

As Archimedes said, "Eureka!"

The realization that Appropriate Technology is the big A and the big T is not as obvious as it appears; it eluded me for some time. I was attending a meeting in Mexico City last year to discuss the role of appropriate technologies (or was it Appropriate Technology?) in the development of the poorer nations. About thirty people had been invited, and it soon became clear to me that, if not a schism, at least a serious division, was apparent among the participants.

There were the True Believers, led by George McRobie standing in for Swami Schumacher, whose ethereal presence nevertheless permeated discussions (. . . but Schumacher says . . .), and with him fresh recruits from a number of Brittanic ex-colonies. The colonial connection could bear further inspection, as the Appropriate Technology movement is firmly grounded not, as one might expect, in an underdeveloped country, but in Great Britain. Recently it has spread to Holland, France and the United States. As a recent AT publication puts it, "Schumacher is coming!"

It is significant that the Appropriate Technology devotees in the underdeveloped countries are by and large financed by the Mother Country. Likewise visits by Appropriate Technology advocates to advise Third World bureaucrats are rarely financed by their hosts. What does this mean? Is this a new version of the White Man's Burden? Is it still up to Us to show Them? Is this, as some Third World nations claim, a neo-colonialist trick? Has any underdeveloped country actually espoused Appropriate Technology on its own?

Read on.

If AT is a religion, Witold Rybczynski is one of its founding saints. His Minimum Cost Housing Group at McGill University in Montreal put out **The Ecol Operation, Stop the 5-Gallon Flush** *(which Peter Warshall called "one of the crucial books of the 70's"), and numerous pamphlets on building with recycled containers. And here he is carping away like every saint in history long-lived enough to see his technique decay into a belief.*

—SB

In Mexico City it was apparent that the Latin Americans for one, were not yet card-carrying members of AT. The Latin American countries achieved their political independence early, in the 1820's, and though they have been dominated in the interim by the United States, this economic domination has not been linked with cultural domination, as in most of the rest of the Third World ex-colonies. It is perhaps for this reason that the Appropriate Technology bandwagon has not reached our southern neighbours. In any case, few of the Latin Americans had heard of "Small is Beautiful," and though they were interested, and indeed active, in small-scale technologies, they didn't know about the big A and the big T.

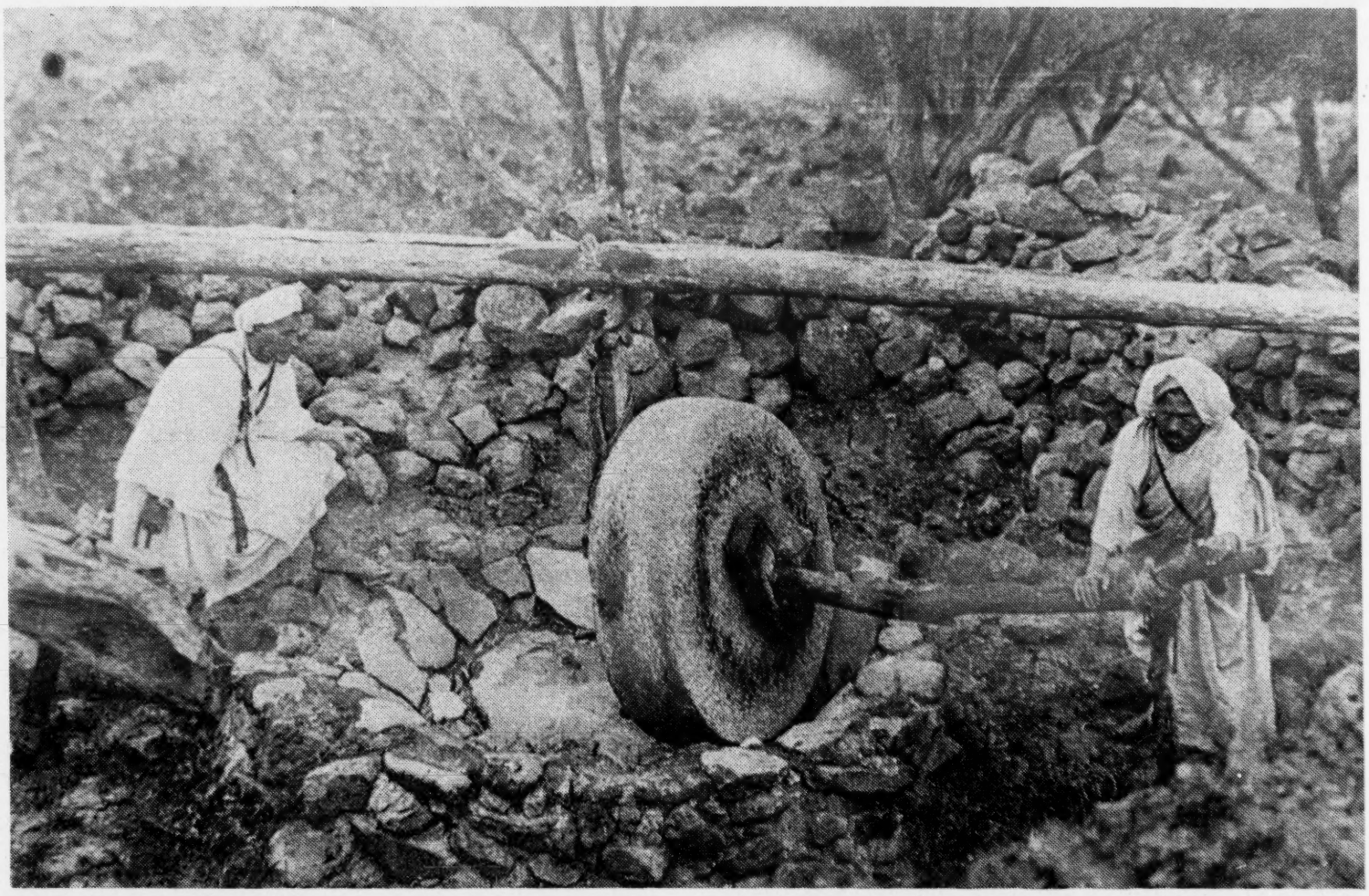
There were some interesting, and revealing, conversational short-circuits as a result.

An American, obviously taken with the Appropriate Technology argument if not himself an active member, described the aspirations of the people he worked with. Among other things he described their relationship to money as a concern with giving rather than getting. Now, in a Californian context this does make sense, and it certainly has a poetic ring to it. One can only speculate on the impact of such a statement coming from the richest country in the world on someone from "the other side of the tracks." During lunch I was talking with a Colombian whose organization was responsible for encouraging the growth of small and medium-sized industries. He was puzzled by the American's presentation. "What did it mean?" he asked me. "Did these people actually live without money; was this now possible in the United States?" Try explaining the idea of cultural secession to someone outside the United States or Europe, you will find it difficult if not impossible. Yet it is exactly this kind of secession that forms one of the cornerstones of Appropriate Technology.

A Chilean economist, a member of the Andean group, a sort of South American Common Market, concluded at another session that the problem was to make technologies appropriate to local conditions and resources. Small solutions for small jobs, big solutions for big jobs, and so on. This brought an irate Indian to his feet. "Don't you understand that modern technology is destructive and violent? All technologies in the future must be small and peaceful. You can't just lump all solutions together. Anyway, as Schumacher says . . ."

The Indian, an ex-Ghandian who had been brought to the meeting by the British parent organization, had assumed that this would be a get-together of the converted. The Chilean was perplexed by seeing a technical discussion turned into a revival meeting.

And there are elements of a religious revival in Appropriate Technology. It is a strange melange of Marxism, Puritanism, and something called Buddhist Economics. To the pragmatic observer however, who is interested in solving problems, AT has little to offer. It is a movement that is long on polemic, and pitifully short on actual accomplishments.



A copy from a Spanish postcard of about 1915, shows a mill for grinding olives. The two gentlemen are Berbers who live in the Riff, in north Morocco, at that time under Spanish "protection." It is my opinion that the underdeveloped countries see Appropriate Technology as in fact a "mill-stone." It may seem quaint to us, as it obviously did to the Spaniards who sold, and bought, this postcard, but you have only to look at the face of the Berber on the right to see the truth. In fact the Riffs were engaged in insurrection against the Spanish from 1921 on. Only the intervention of the French postponed the inevitable date of independence till 1956.

Following an illustrated lecture on various "alternative" technologies, owner-built wind-machines, bicycle powered coffee-mills, and the inevitable solar still, the kind of thing that enraptures American audiences (I speak from shameful personal experience), one of the Mexicans turned to me and said, "But they aren't serious. These things are not real, they are toys!"

Of course he was quite right. This grab-bag of nineteenth century theories and nineteenth century hardware simply fails to convince. Although it offers a convenient scapegoat (modern technology) for our ills, both real and imagined, it soon becomes clear that it has little of substance to propose as a replacement. To put it crudely, Appropriate Technology simply can't deliver the goods.

It is no surprise then that AT has been well-received almost exclusively in the industrialized countries. They alone can afford the luxury of this sort of philosophical speculation. The underdeveloped countries are harder pressed. Though there are indications that the concept of appropriate and adaptive technologies already plays a role in their development, it is unlikely that the big A and the big T will make much headway there. The tangible impact that they will have on the Western world remains to be seen. ■

Office of Appropriate Technology in California

*It's still just a kid, but growing fast. Amongst their early work is a sheaf of bibliographies and sources for Appropriate Technology. The items seem well chosen (*CQ *has carried many of them) but the importance of the effort is that it's being done under the seal of the Governor's Office. . . . how's your state doing? The papers are prepared by* RAIN *magazine; 'nuff said.*

—J. Baldwin

Office of Appropriate Technology in California
Brochure and publications list

Free
from:
Office of Appropriate Technology
Box 1677
Sacramento, CA 95808

The Cost of Urban Growth: Observations and Judgements
Richard C. Bradley
Pikes Peak Area Council of Governments 1973
27 East Vermijo
Colorado Springs, CO 80903

$2.32 (postpaid). A good, clear documentation of the problems connected with urban growth that debunks the myth that an increasing population improves the quality of services or eases the tax burden. It's full of good statistics:

"Among the 148 Standard Metropolitan Statistical areas with populations larger than 200,000 people in 1970, those that *lost* population during the 1960s averaged a 9% increase per capita cost . . . whereas those that *gained* population averaged a 12% increase in per capita costs."

●

Our sewage problems are a good reminder that it's usually easier to avoid problems than to correct them. Why do we dump our sewage into our drinking water to begin with — and then have to figure out how to repurify the water at great effort and expense? Diluting our sewage 100 times with pure drinking water overloads our septic and leach systems. Central sewers compound the problem, resulting in such vast volumes of water that require expensive mechanical and chemical treatment.

Fundamentals of Energy Utilization

As usual, review of fundamentals leads to new territory, such as far-from-equilibrium engines

BY HAROLD J. MOROWITZ

Amidst the frantic clamor of voices telling us how to solve the energy problem, we often fail to hear quiet attempts to go back to fundamentals and reassess our assumptions. One such appeal to first principles is conservation, which is hopefully growing in strength. Another approach is to re-examine the basics of thermodynamics and look for unseen possibilities in the structure of our existing scientific theories. In this essay, we will find that such principles point to most promising alternatives.

Most of the earth's conventional energy reservoirs are in the form of fossil fuels. Even this simple statement is deceptive. We should have said that the energy is stored in fossil fuels and oxygen. Hydrocarbon plus oxygen are at a higher chemical free energy than are carbon dioxide and water, which are the products of the reaction. Without the presence of an oxidant, fossil hydrocarbons would be a negligible source of energy. We tend to forget the oxygen since it comes for free, but it is a major thermodynamic component of the system.

The uses of energy can be conveniently classified into work and heat. Work is generally mechanical or electrical, but these can formally be treated in a similar way. Almost all work is obtained from heat engines, so that virtually all kinds of stored chemical energy are first converted into thermal energy and then used directly for warming or converted into work. We have known since Sadi Carnot's propaedeutic essay in 1824, (Reflections on the Motive Power of Fire), that heat is the most degraded form of energy, and conversion from heat to work is a relatively low efficiency process. Nevertheless, heat engines were the technologically easiest to design and build, the industrial revolution was at hand, no one worried about fuel shortages, and western civilization made a commitment to this type of engine.

Thus, while conventional machinery works very well, it has three serious drawbacks. First, it is of relatively low efficiency because of fundamental physical limitations such as Carnot's theorems. Second, the lost energy shows up as thermal pollution in the neighborhood of the power source. Third, high temperature combustion leads to toxic products. These features are perhaps best seen in the design problem for coal burning electric generating plants.

Given these facts, it is easily seen why electrical heating is such an absurdity from an energetic point of view. First electricity is made in a power plant where there are great losses as local heat pollution. The electrical energy is then reconverted into heat at the site where it is used. If the conversion to heat were directly made at the point of use, then all the thermal pollution generated in the first case could be directly useful as heat. A minimum conservation effort would thus call for the banning of electrical heating systems.

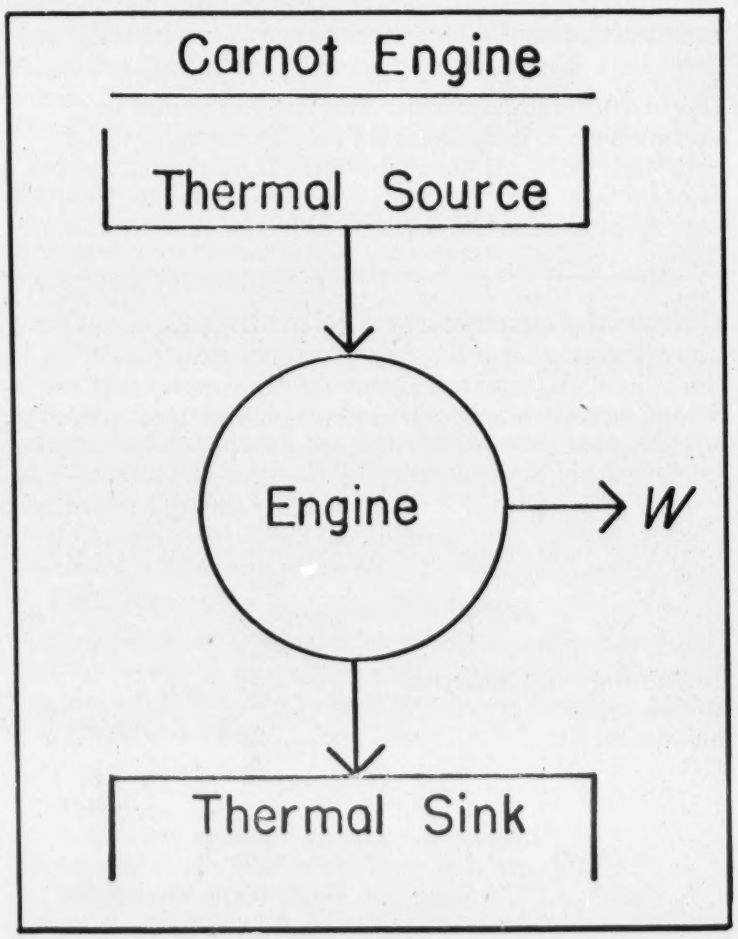
Harold Morowitz is a professor in Yale's Department of Molecular Biology and Biochemistry. His book Energy Flow in Biology *was the source of the quote we used on the inside cover of the WHOLE EARTH CATALOG, "The flow of energy through a system acts to organize that system." A poem of his appeared in the summer '75* CQ.

—SB

Behind all of these situations is the fact that the conversion from any other form of energy to heat is easy while all other conversions are more difficult; this is almost the content of the second law of thermodynamics. Implicit in this view is the reason why solar heating is such a good idea. The energy of the solar photon flux is there as a basic fact of astrophysics. The conversion to heat is easy as a basic fact of thermodynamics. The more heat we supply from the solar source, the more we can preserve fossil fuels for mechanical conversion.

We now come to a crucial question. Have we discovered the most efficient method of converting chemical energy to work? Here the basic physics provide a firm answer. We have not! To understand this deep, difficult, and vital issue, we must discuss some of the basic science. We start with a drawing which illustrates four basic modes of obtaining work from heat and chemical sources, and examine them one at a time.

A Carnot engine is an idealization of which most of our efficiency theorems are based. Such a device slowly takes energy from a hot source, does work, and rejects heat to a cold sink. The discharge of energy to the sink is a necessary part of the cyclic operation of the engine, so that efficiency is limited. This machine must be a source of local heat efflux. There are no actual Carnot engines. The concept is a limiting abstraction to develop the fundamental physical laws underlying energy conversions.



All present-day industrial engines operating off conventional fuels convert the chemical energy to heat, and then operate from the hot working substance in a manner analogous to the Carnot engine. All industrial engines therefore must reject heat to the environment, and work in a relatively restricted efficiency range. The industrial revolution has predominantly been powered by devices of this type.

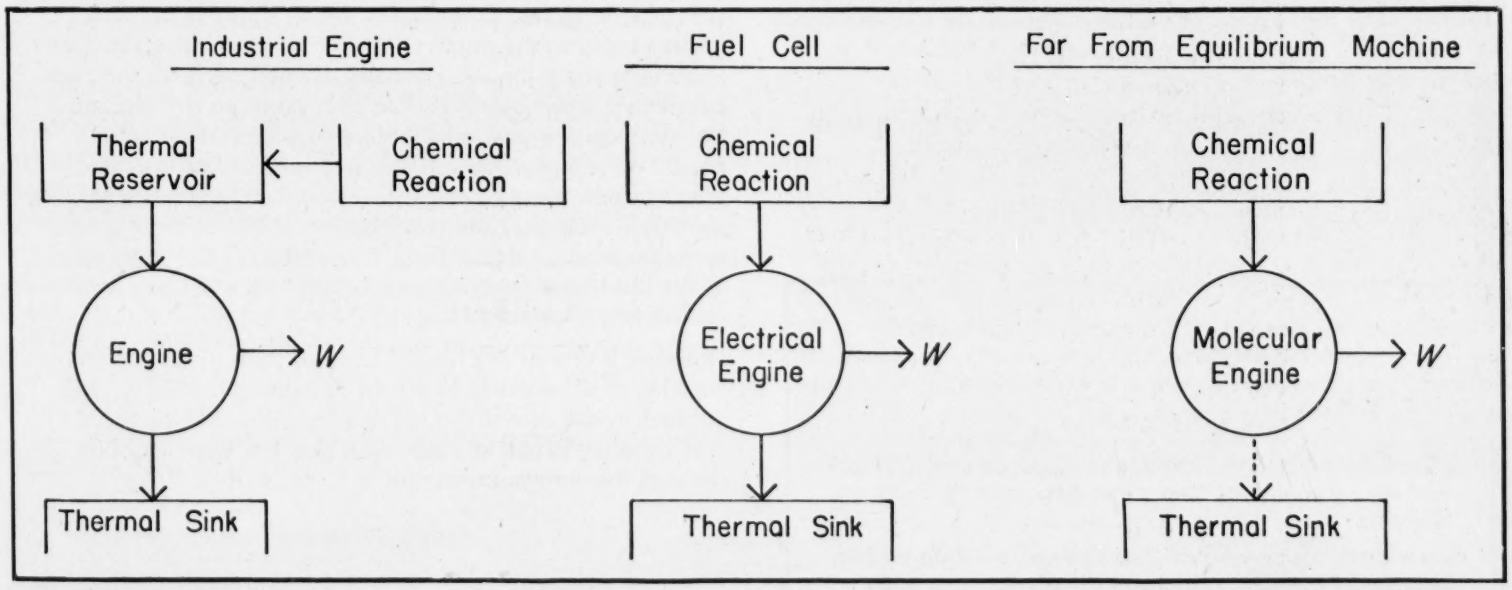
In everyday experience we are aware of another type of device which converts chemical potential energy directly into electrical energy, an electric battery. In a conventional battery, oxidized and reduced substances are stored in the battery, and these react separately at two different electrodes accompanied by an external flow of electrons from cathode to anode. This flow of current may operate an electric engine. Such a device does not require a conversion of chemical energy to heat and therefore is not limited by the Carnot theorems. In principle, much higher efficiencies could be achieved by such devices, but such efficiencies require very slow operation. In addition, batteries are limited to oxidation reduction reactions involving net electron transfers, which is not the normal pathway of oxidation of fossil fuels. As an example, when zinc ion and copper react in a battery, the process is $Zn^{++} + Cu \rightarrow Cu^{++} + Zn$. There is an actual flow of electrons from copper to zinc which may take place through an external circuit. When coal is oxidized by atmospheric oxygen, the reaction $C + O_2 \rightarrow CO_2$ involves a partial shift of electrons from carbon to oxygen. No free electrons are transferred and it is difficult to use such a reaction to generate electricity from electrode processes.

A more recent variation of the battery is the fuel cell, where the chemicals taking part in the electrode process are stored separately and supplied to the cell on demand. As an example, hydrogen may be bubbled over one electrode and it gives up an electron. The hydrogen ion moves to the other electrode, where it interacts with oxygen and an electron to yield water. These devices are not heat-limited and may in principle produce high efficiencies. They do require near-to-equilibrium operation, and it is hard to design appropriate oxidation reduction reactions for conventional fuels. Nevertheless, research on fuel cells is a vital step in developing an alternative to the heat engine. It is probably receiving too small a share of the research budget.

A fourth type of chemical-to-work converter is possible which operates in a very far-from-equilibrium domain. Such devices transfer energy by molecular collisions before it is converted to heat, and therefore escape the normal thermodynamic restrictions. A gas phase chemical laser in series with a photocell and an engine would be just such a system. In the chemical laser, the high energy state of molecules is brought about by a chemical reaction, and the energy is rapidly radiated out as a laser beam before it is converted to heat. The beam striking the photocell leads to a flow of current that drives the engine. The entire scheme operates very far from equilibrium and does not, in principle, require any heat loss. Here is a theoretically possible scheme that could in principle lead from fuel to work with very high efficiency. There are undoubtedly a whole class of devices which may act in this far-from equilibrium fashion, and we have simply not explored the problem in any systematic way. Somehow, almost no energy-supported research goes on in this area, either in experiment or in theory. We are limited not only by our resources but by our imaginations.

A fifth possibility is not shown on the drawing, yet needs some consideration. Muscle fibers and bacterial flagella are machines which operate by direct conversion of chemical to mechanical energy. They are isothermal (constant temperature) engines, so they cannot be among the first two types. They must therefore function either as equilibrium devices of type three or very far-from-equilibrium devices as in type four. It is also possible that they operate on a molecular quantum mechanical domain that is not describable by any of the macroscopic engines. They are not Carnot theory limited, and might possibly achieve high conversion efficiencies. If we could transform the biological principles of energy conversion to industrial use, we might open a whole new technology. The bionic approach to energy conversion appears to offer a wide range of possibilities. Again, almost no research dollars are going into exploring these possibilities.

In any case, basic science makes it clear that there are no barriers to more efficient conversion of fuel energy to mechanical energy with minimum heat pollution. This is not futuristic wild-eyed talk but conservative application of equilibrium and non-equilibrium thermodynamics. Such conversions would stretch our present fuel reserves by a factor of two or three and greatly reduce the severe environmental problems of thermal pollution. Yet very little work goes on along these lines, and these thoughts hardly enter into the planning of governmental agencies. I submit we have had a failure of faith in the ability of science and technology to provide solutions within the framework of more efficient conversions. There are no vested interests in chemical-to-mechanical converters; there are no lobbies. There are however a few scientists who see within the structure of thermal physics the possibility of doing much more than we have done.



One such scientist was C.W.F. McClare, whose paper, "Chemical Machines, Maxwell's Demon, and Living Organisms," (J. Theoret. Biol. 30, 1-34, 1971) is a landmark in the field of energy transduction. I fear that the reception accorded to these ideas was a factor in Colin's untimely death. This essay is my memorial to him. I suspect that his ideas will yet play a major role in the ongoing attempts to solve the problems of energy utilization. ■

Box 428, Sausalito, California 94965

The Double Bubble Wheel Engine

A patent disclosure

BY STEVE BAER

To understand the invention it is best to first understand its elements. *Figure 1* shows a ring of 6 divers. The water level is indicated. The ports on top of each diver are open — the ring is horizontal and the water reaches the same level in each diver. If the ring is slowly rotated the water remains at essentially the same level in each diver. In *Figure 2*, the ring is shown tilted. The water has shifted to a new level, almost filling some of the divers at the low side and almost absent from the divers at the high side. If the ring is rotated in this position water alternately fills and empties individual divers. For instance as diver No. 1 moves towards the position of No. 3, it fills with water and as it continues on past the position of No. 3, it empties. The open ports allow air to enter as a diver empties and air to leave as a diver fills.

The ring is returned to the position of *Figure 1* and corks are inserted into the ports preventing air from entering or leaving. *Figure 3* shows the ring again tilted on its side. This time the water is at many different levels. The air captured in the lower divers prevents all the water from running into the lower divers. The size of the air bubbles in each diver may be approximately the same. The lower bubbles are somewhat smaller since the density of liquid multiplied by the difference in elevation between the level in diver No. 1 and No. 4 now compresses No. 4.

If the ring is rotated in this position there is a slight flow of water into the divers as they sink and out of the divers as they rise. The magnitude is a function of the ring diameter, fluid density, and gas pressure in the bubbles.

In "Gravity Engines and the Diving Engine" Baer spelled out the principles of a simple two-diver gas/liquid engine in the Summer '74 CQ. *A month or so later* The New Scientist *ran a big article on a similar, if cruder, engine developed by British scientists. Neither went beyond models into application. This new diving engine of Baer's may be closer to making that step.*

Steve Baer is the head of Zomeworks in Albuquerque, New Mexico, which designs and manufactures such advanced soft technology as Skylids, Beadwall, Zomes, and working solar buildings. Baer's books include Zome Primer *and* Sunspots.

—SB

In *Figure 4* two rings are placed on the same vertical axis. Diver No. 1 above diver No. 7. Their ports are now connected by a tube so that an air passageway exists between No. 1 and No. 7, but No. 1 and No. 7 are not connected to the outside atmosphere. Similarly for No. 2 and 8, 3 and 9, etc.

If the pair of so-connected rings is tilted as in *Figure 5*, the water assumes levels similar to the situation in *Figure 3*, but the relative liquid levels in the top ring are essentially the same as in the bottom ring. The gas pressure resisting the inflow of the water is the same in No. 1 as in No. 7.

When the pair of rings is rotated there is a compression of the gas and inflow of liquid at the bottom of the cycle — similar to that described in *Figure 3*. The resemblance of *Figures 5* and *3* is true only so long as the connected divers are in the same angular position on the axle.

Figure 6 shows the two rings with the relative positions rotated 60° lower than No. 1. The water levels in No. 1 and No. 7 were identical. As No. 7 is lowered the pressure from the liquid increases and the bubble rises through the tube into diver No. 1 leaving diver No. 7 largely filled with liquid and diver No. 1 largely filled with air. Rotating the pair of so-attached rings causes the air bubbles to move always towards the relatively higher of the connected divers — consequently the air is equally divided between the two connected divers every 180° as they come to the top and bottom position and is largely held by each diver for a period once every 360°. If the two rings are at the same temperature, there is very little resistance to turning in either direction because if the two rings are at the same temperature, the bubbles descending in one ring are the same size as the bubbles ascending in the other ring and there is no resulting turning force.

However if one of the rings is warmer than the other, the bubbles in the warm divers tend to expand more than the bubbles in the cold divers, with a resulting turning force that rotates the pair of rings such that the warm bubbles rise and the cold bubbles sink.

Patent Summary

The invention is a device for converting thermal energy into mechanical energy. Pairs of chambers (divers), one hot and one cold are connected with an intermediate regenerator so that a bubble of gas may pass from hot diver to cold diver through the regenerator. The divers are arranged about an axle so that as the engine turns the bubbles pass from hot

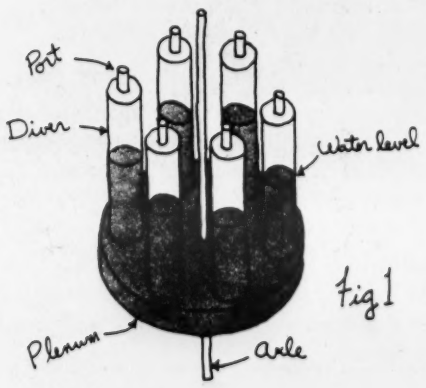


fig 1

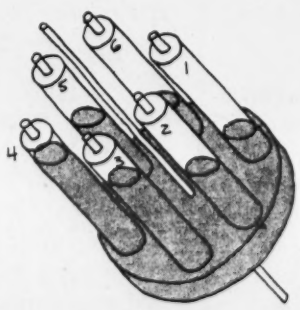


fig 2

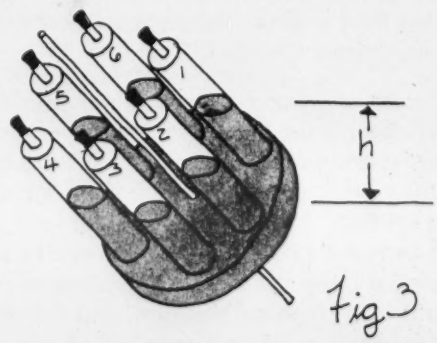
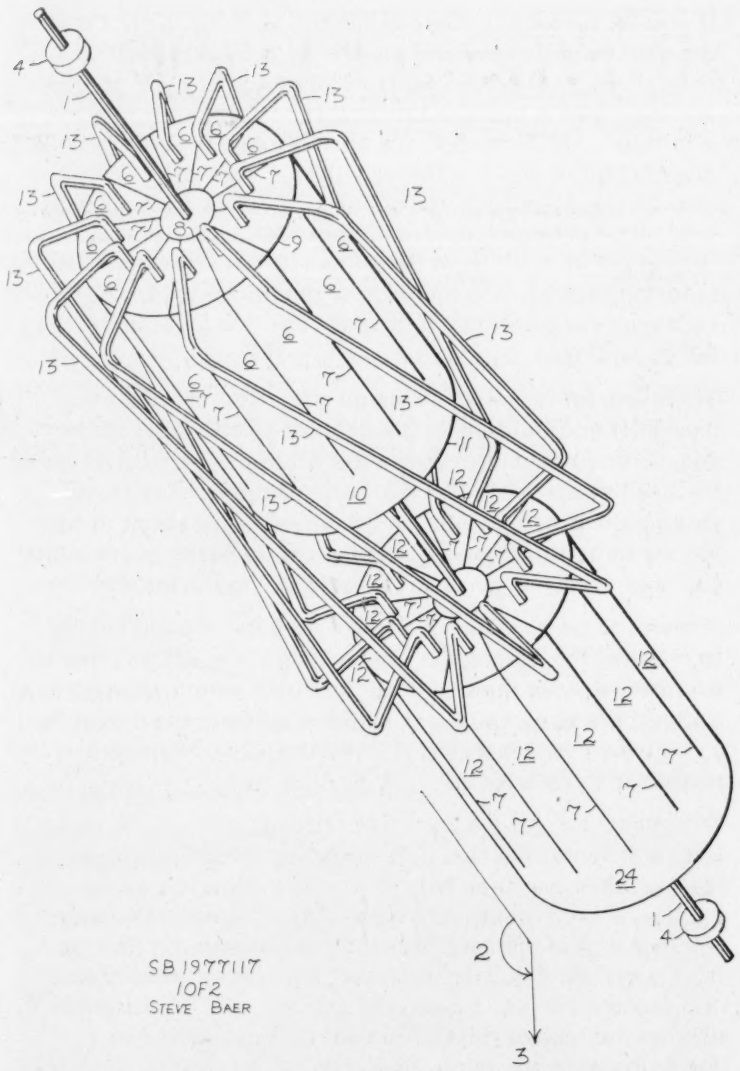


fig 3

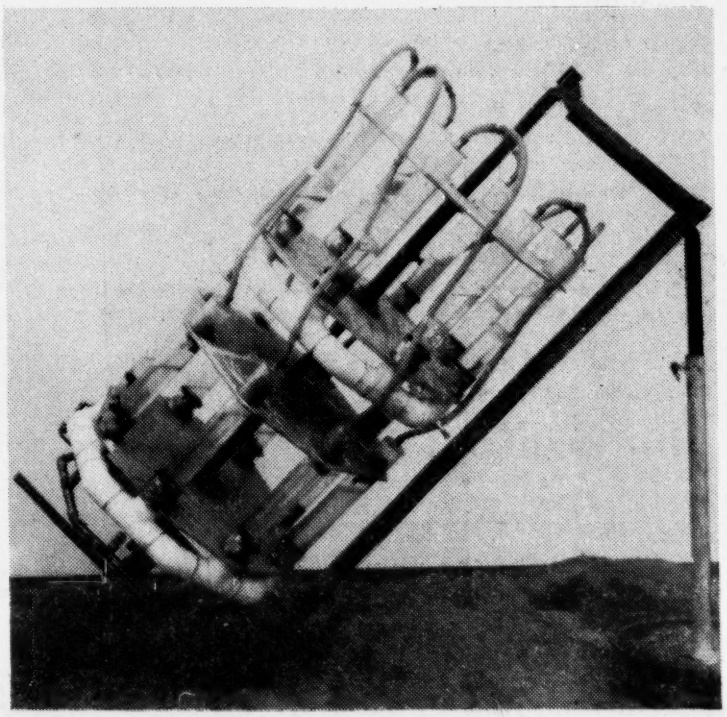


to cold to hot divers. The alternating expansion and contraction of the bubbles keeps the majority of liquid always on one side of the axle. The imbalance causes the engine to turn in a gravitational or centrifugal field. The cycle that powers the engine depends on the liquid, or liquids in the engine and the gas or gases in the bubble. A liquid with a relatively low vapor pressure, such as a low viscosity oil, and a high pressure bubble of a gas different than the vapor of the liquid, such as air, causes a cycle similar to that of a Stirling engine. A liquid with a relatively high vapor pressure, such as water, and a relatively low pressure of gas different than the vapor of the liquid, such as air, causes a cycle like that of a Rankine engine.

One object of the invention is to build a device that can economically use a variety of heat sources, such as burning fuel, solar energy, or waste heat from other applications. Another objective of the invention is to build a device that moves as one part, but which is capable of collecting and storing heat and cold for its own operation. A further objective of the invention is to build a device that can easily be used as a heat pump or refrigerator. It is obvious that the engine, or multiples of the engine, can be arranged so that they spin about their own axes. They rotate the arrangement about an external axis so as to create a centrifugal field to increase the power output.

Comments

The problem with these engines is their relatively low power compared with their volume and weight. (See **Stirling Cycle Machines**, G. Walker, Clarendon Press, Oxford, 1973.) The engine shown in the photograph weighs about 80 lbs. and yet we have only coaxed about 1/3 of a watt from it. This is the first engine built and I believe we can increase the power to weight ratio. The first version had the rings connecting the divers made of 3/4" copper pipe. The small pipe restricted the flow of water from diver to diver and the engine exhausted itself by fluid friction at a very low r.p.m. *[more →]*



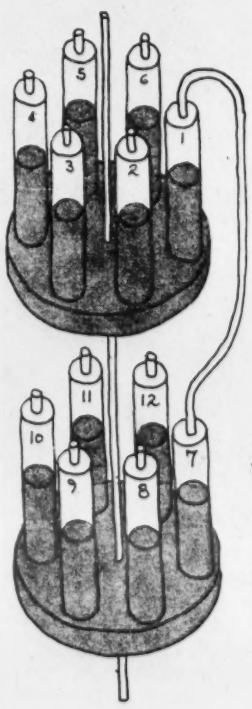


fig 4

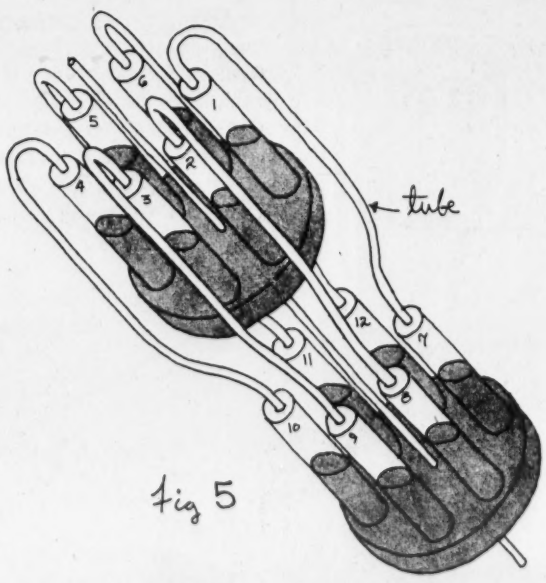


fig 5

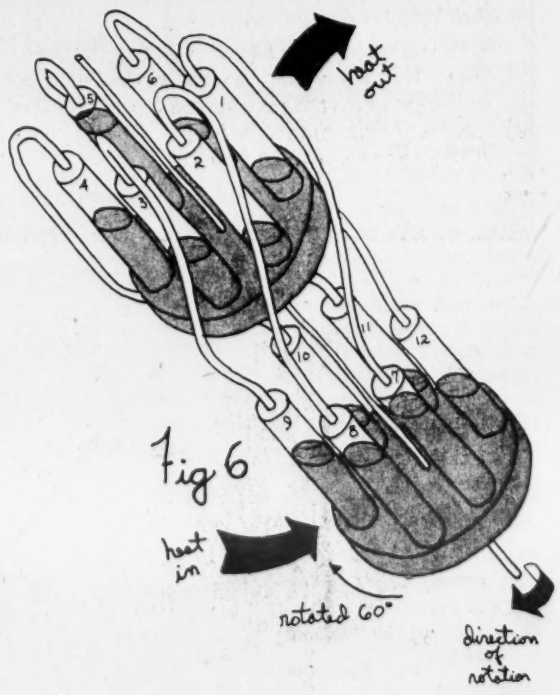
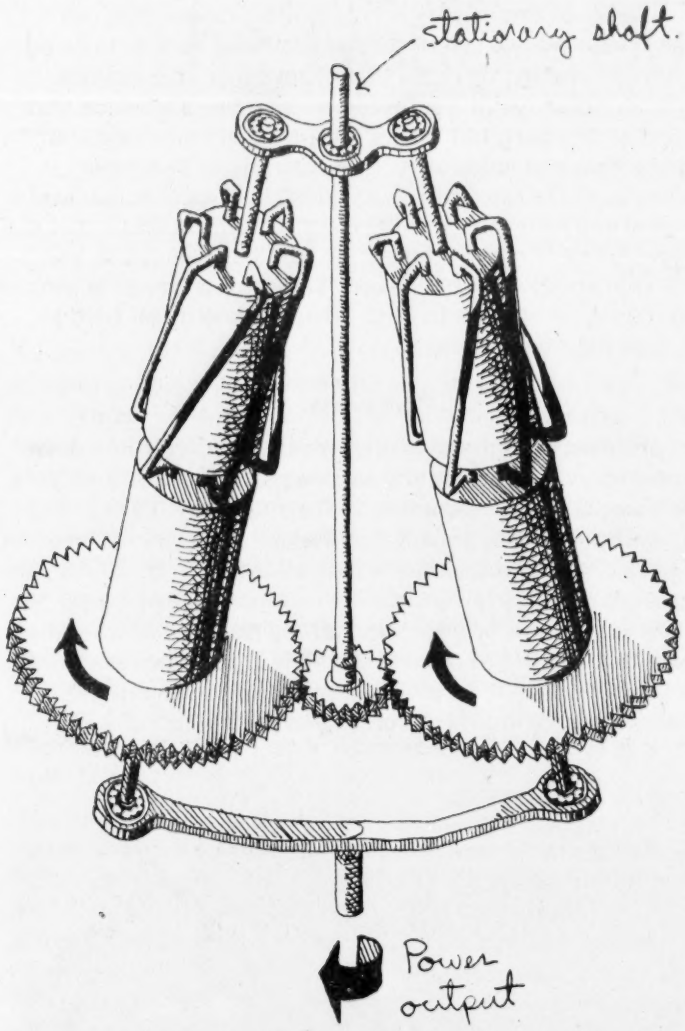


fig 6



We have not tried this yet. The power can be taken from the rotating assembly, which enjoys perhaps 10 to 100 or even more G's. The double bubble wheel is simply a rotating diving engine with only one moving part. **Sunspots** *has a chapter on these – a slightly altered version of the article from the Summer '74* **CQ**. *Once you have started playing with hot and cold liquids and bubbles it's hard to believe that there aren't simple engines ready to provide mechanical energy or to be run in reverse as heat pumps. It seems the double bubble wheel may be an answer.*

If you let a double bubble wheel run without load, it reaches terminal velocity when all the energy is used to move liquid from diver to diver and gas from diver to diver. In the first version – which my son Jose and I got going on Saturday afternoon, 18 December, the terminal velocity – with cold divers at 60° F and hot divers at 125° F was about 3 r.p.m. and the power output was about 1.75 ft. lbs./min. Ten days later, after enlarging the rings from 3/4" to 2" pipe, enlarging the air hose from 5/16" to 1/2" and shoving Tuffy scouring pads up into the ends of the hot divers for heat exchangers, we got 17 r.p.m. and 15 ft. lbs./min. with 60° to 134° F.

There is great promise in enlarging the flow channels and divers. If you double the diameter of all the tubes in the engine, you not only increase the volume by 4, but you cut the head needed to move the water at the same velocity. Double the pipe diameter and the head is cut about in half for the same fluid velocity. The gases do better as the tubes get larger, but not quite so dramatically as the liquids.

It seems to be a matter of doing a number of experiments to confirm the advantages of changing scale. I don't know whether we have the design for an insect which we are trying to build the size of a dog or whether we have the design for a dog which we are trying to build the size of an insect. I suspect it is the latter.

The engine can have a low power density and still be useful. Even if it ran 24 hours a day to convert only 5% of the sunlight incident upon its hot divers into mechanical power, the engine would have a place as a water pump. The large volumes of water in the hot and cold divers mean that the same parts can act as collectors, cylinders, flywheel and heat storage. A cold clear night can be useful to the engine since as the temperature of the cold divers sinks, the power increases.

A promising way to increase the power output which Bill Mingenbach has been pointing to as the ultimate goal for all the gravity engines we have worked on these last years – is to have the engine supercharge itself by creating its own field. In the case of the double bubble wheel this is easy to design. Two or more wheels spin themselves rapidly about an external axis as they themselves spin slowly about their own axis. ■

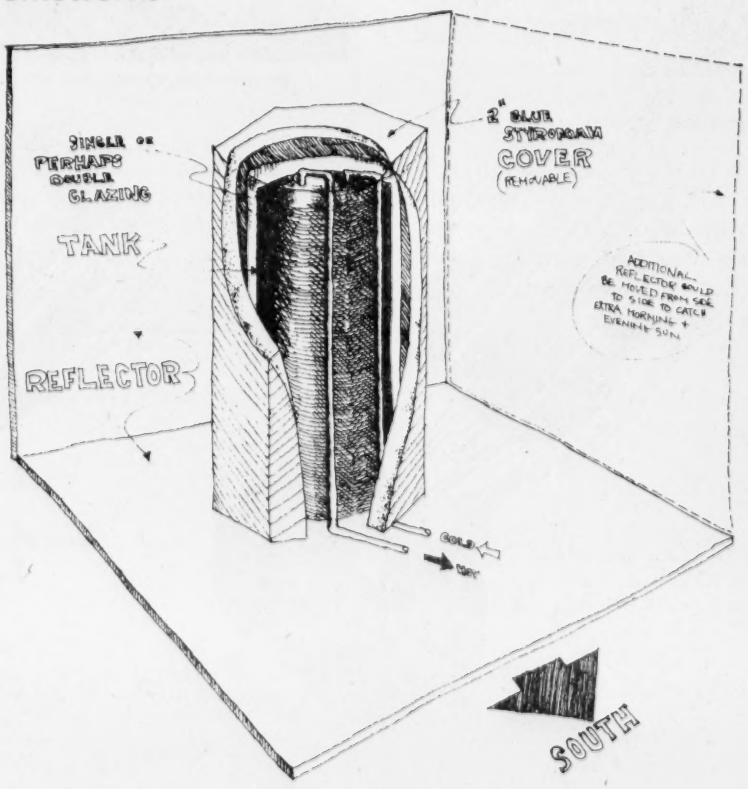
More Hot Stuff from Zomeworks:
The Pro Heater

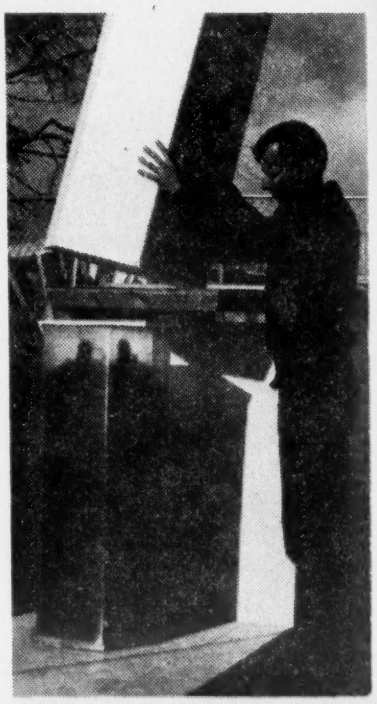
The Pro water heater must be the simplest design to make yet, and I can personally vouch for its performance: "hot water by noon." I also tend to agree with Steve Baer's claim that:

One great benefit from using the sun to heat your house and hot water is that it makes you feel better. Although untested scientifically, it is possible that exposure to the sun enriches the water or the house with orgone energy (or some other scientifically disreputable substance) improving the health, energy and spirits of the users.

And in a gallons-of-hot-water-per-buck comparison, this heater makes the $1000 commercial outfits seem absolutely ludicrous.

–J. Baldwin





Baer and styrofoam "tea cozy" for solar hot water tank.

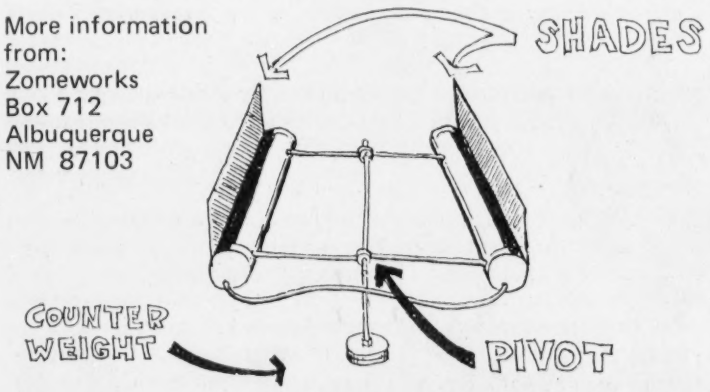
Zomeworks Sun Tracker

With characteristic well-honed simplicity, the Zomeworks crew solves the problem of making a reliable sun tracking device. Steve Baer says:

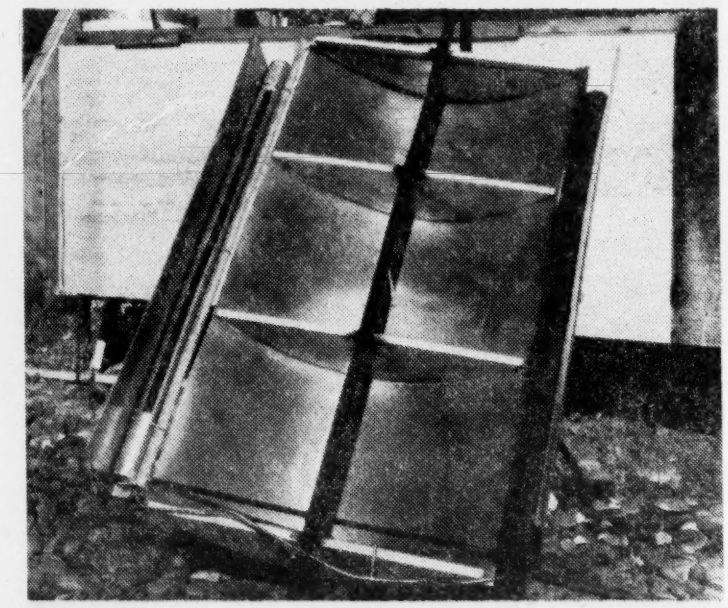
> *This works beautifully — has been for a year. The night return paint job has been operating for 3 or 4 months — at dusk you see the tracker heading east.*

—J. Baldwin

More information from:
Zomeworks
Box 712
Albuquerque
NM 87103



The tracker works because if it is not pointing at the sun, one of the tanks is more exposed to the sun than the other — it grows warmer and shifts weight to the other tank which rocks the tracker back into the sun.



Day-Land steam engines

In case any of you would like to make a 20 horsepower steam engine, Mr. Moore sells plans and castings ready to machine. It's an old proven design similar to the one used in Stanley Steamer automobiles, but it has been updated with more modern materials and details. He also sent us the following steam power source list. Lotsa people talkin' about it but few doin' it. Now there's no excuse.

—J. Baldwin

Day-Land Steam Engine
Catalog of casting, plans, and brochure.
Send self-addressed, stamped envelope to:
C. William Moore, ME
Box 174
Pleasanton, CA 94566

Cole's Power Models
Box 788
Ventura, CA 93002
Model engines, boilers, etc.

Light Steam Power
Kirk Michael
Isle of Man, U.K.
Engine castings, plans for engines, boilers, and books on steam

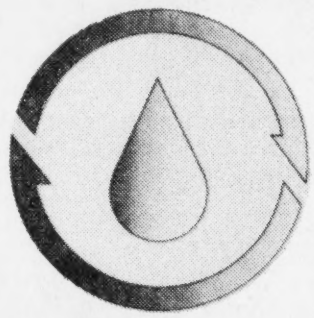
Paul R. Breisch
187 Ridge Pike
Royersford, PA 19468
Model engine, pump, etc., castings

William T. Blake
Box 54
Canandaigua, NY 14424
Model supplies

A Model Used Oil Recycling Act

If you were my congressperson and I came up to you and started bitching about all the used oil that was being thrown away into our water supply instead of being recycled so we wouldn't have to import oil from all those Arabs etc. & etc. you'd be on the spot, wouldn't you? Because you wouldn't know what to do to get a bill going that would get recycling going. You'd have to hem and haw instead. But if someone waved a well-worked-out model bill in your face and asked you to get one like it passed, things would be easier, right? Right. Let's get on it.

—J. Baldwin



A Model Used Oil Recycling Act
William A. Irwin
Free
from:
Environmental Law Institute
Suite 620
1346 Connecticut Ave. NW
Washington, D.C. 20036

Small Gas Engines

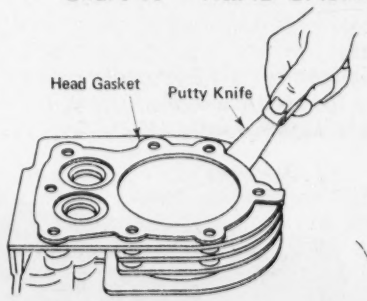
A non-intimidating book commendably designed so the mechanical dumb-dumb can keep the little guy running. For the amateur, it's the best we've seen. For major work, you'll also need a shop manual for the engine you have.

—J. Baldwin

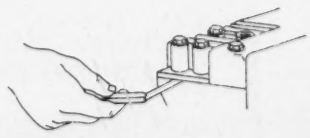
Small Gas Engines
James A. Gray and
Richard W. Barlow
1976; 248 pp.
$8.95 postpaid

from:
Prentice-Hall, Inc.
Box 500
Englewood Cliffs, NJ 07632
or Whole Earth

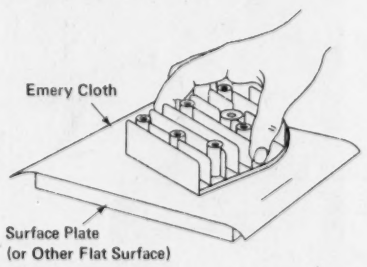
Chart 43 — HEAD GASKET REPLACEMENT



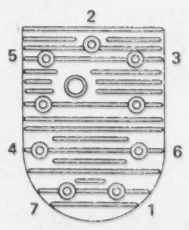
CLEANING GASKET FROM ENGINE



CHECKING FOR WARPAGE

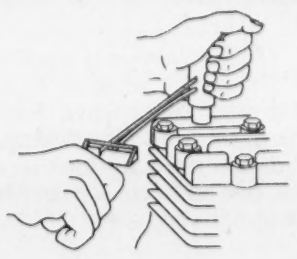


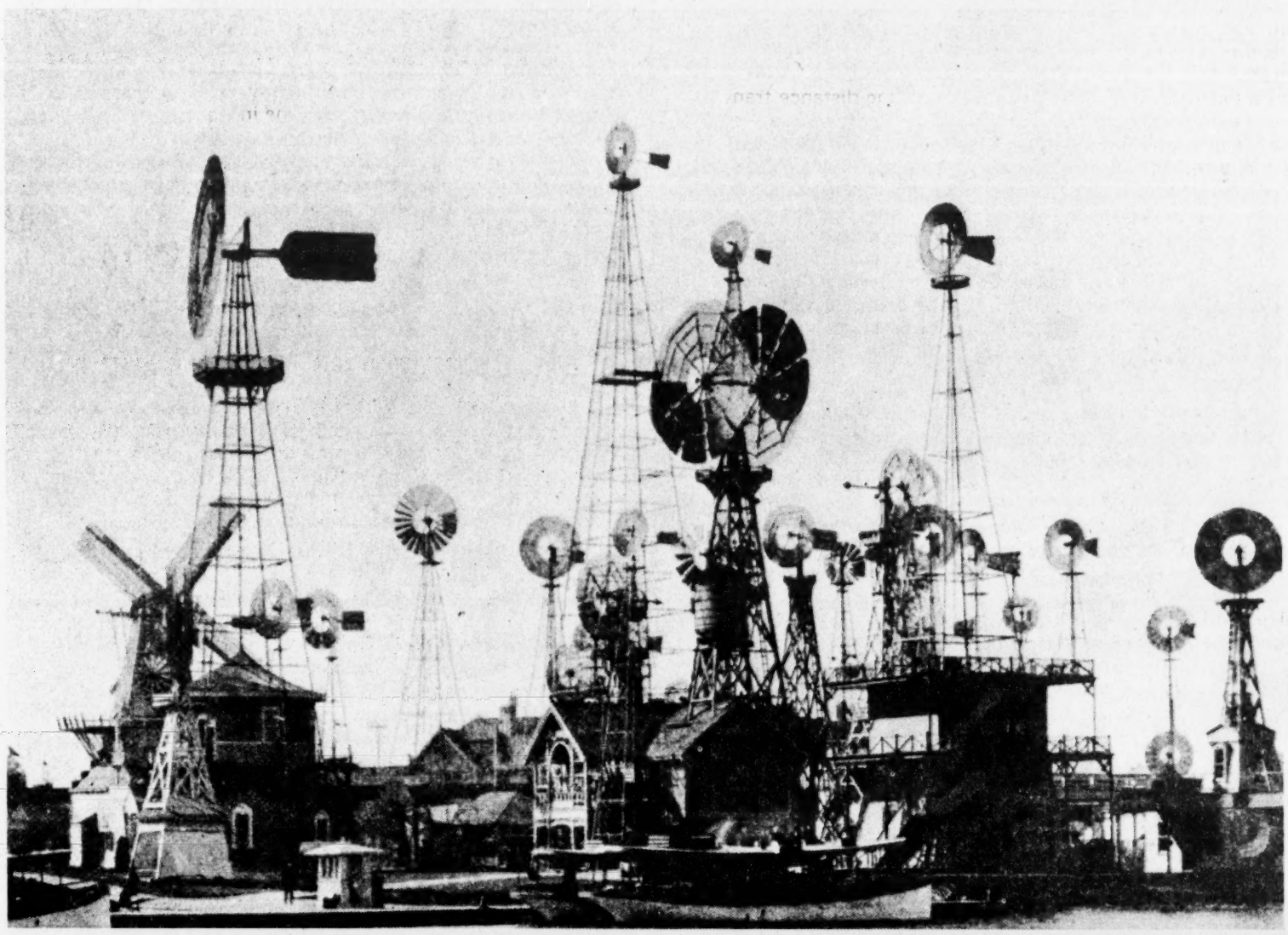
RESURFACING HEAD



EXAMPLE OF HEAD BOLT TIGHTENING SEQUENCE

TIGHTEN CYLINDER HEAD BOLTS WITH A TORQUE WRENCH



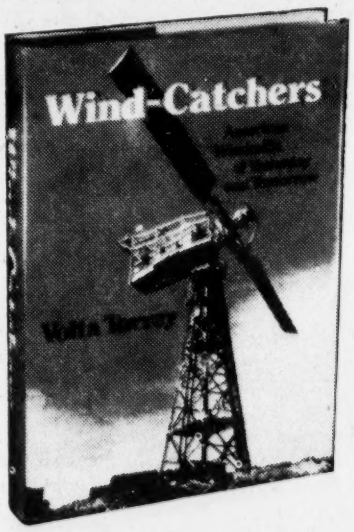


Windmills competed at the World's Columbian Exposition, Chicago, 1893.

Wind-catchers

Well, I still don't like books written for a 12-year-old mind, but I have to admit I learned a lot about windmills that I didn't know before. Guess that'll do for now. . . .

—J. Baldwin



Wind-Catchers
(American Windmills of Yesterday and Tomorrow)
Volta Torrey
1976; 226 pp.
$12.95 postpaid
from:
The Stephen Greene Press
P.O. Box 1000
Fessenden Rd.
Brattleboro, VT 05301
or Whole Earth

New Amsterdam's first governor is credited with putting up three windmills. The Dutch went on to line Broadway with them from the Battery to Park Row. From a ship entering the big harbor then, the windmills sawing lumber and grinding grain made the new city look like a port in The Netherlands. The road to Peter Jansen Mesier's mill at the foot of Cortlandt Street was called Old Mill Lane.

Geothermal Technoecosystems and Water Cycles in Arid Lands

Geothermal energy certainly is one of the important fields under development these days, but what makes this paper interesting is more than its academic competence. The author is a specialist with a generalist's wide vision. He introduces us to the concept of "technoecology" and presents his geothermal analysis in those terms. The result is a report quite unlike anything I've ever read before. It's worth checking out just for the viewpoint.

—J. Baldwin

Geothermal Technoecosystems and Water Cycles in Arid Lands
Christopher Duffield
1976; 202 pp.
$10.00 postpaid
from:
University of Arizona
Office of Arid Lands Studies
845 N. Park Ave.
Tucson, AZ 85719

"Technoecology" can probably be defined in as many ways as "ecology" is. Perhaps it is least limiting to define "technoecology" as the study of large, complex industrial systems by analogy to biological systems, particularly at the ecosystem level. Technoecology, though, is not solely a passive study, for the technoecosystem is under collective human control, and our changing perception of it will alter our management of it. Thus technoecology also involves active evolution of macroscale technoecosystem strategies.

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[more →]

In high-energy technoecosystems, mechanical and inorganic sectors dominate and biological sector plays a relatively minor role. Large mechanical components are integrated into macroscale ecosystem patterns. Long-distance transport and macroscale regional specialization and interdependence are common. Technomass (analogous to biomass) and energy flow per person are high, human labor is a small fraction of total energy flow, and large, comfortable cabins and cybernetic control rooms are provided. Outward and inward sectors are usually separated spatially and socially. Most people inhabit the large inward sector, and are generally ignorant of still larger outward sector functions. Social awareness and culture have few ties (except aesthetic) to the natural environment. Technology is highly developed and rapidly evolving, and people play highly specialized roles in high-energy technoecosystems.

In low-energy technoecosystems, biological sector dominates; mechanical and inorganic sectors are of relatively little importance. Mechanical components are usually few, small, and discrete, and do not form macroscale ecosystems. Transport and specialized interdependence networks are spatially small; local independence is common. Technomass and energy flow per person are low, human labor is a large fraction of total energy flow, and no plush cybernetic control rooms are provided. Outward and inward sectors are usually very close and often combined spatially and temporally; their social systems overlap and are usually indistinguishable, since the same people are involved in the functions of both. Inward sector is small, and most people are aware of and participate in the functions of outward sector. Social awareness and culture are very closely tied to the natural environment. Technology is at low level and changes very slowly. People who live in low-energy technoecosystems tend to be generalists.

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Geothermal technoecosystems are excellent examples of technoecosystems. They are very much like bioecosystems; the biological analogy is very good. As do bioecosystems, they have orderly networks of diverse, complex components (well-adapted modules and low-entropy channels) arranged according to environmental conditions, internal needs, and thermodynamic laws of energy systems. Geometries and materials are in optimum locations and optimum roles (for example, optimum arrangement of theothermal wells is a hexagonal grid, the same pattern which appears in bioecosystems, spatial economic systems, and many crystals). Like bioecosystems they are entropy jets, open systems which maintain homeostasis, have hierarchical energy transformation chains, and evolve. Like most technoecosystems, however, the they use new non-biological geometries, materials, and physical properties (e.g., turbines, steam, heat, and pressure).

•

Suddenly, geothermal technoecosystems begin their rapid evolution. Airborne remote sensors, geochemical sniffers, and geophysical shockers probe the surface, and a curtain of cold, low-pressure drill hole heat pipe filaments rapidly descends from the outer world to tap near-surface heat concentrations. Hydrothermal convection systems are force-cooled and pumped dry and left bloated with a cool burden of reinjected brine. Geopressured reservoirs are depressurized. New underground cavities are blasted out and pumped cold. And plutons are prematurely frozen on the spot. In many places the geothermal gradient is altered so much that the effects will last for millions of years. It is a swift, inexorable global geological massacre.

Drill holes are subterranean fingers of human control, of technolife, which penetrate the permeability and conductivity barriers that have formed and protected the subsurface heat storage systems. By taking heat out, these linear conduits can kill geological systems as inevitably as spears kill mammoths. Ancient geological heat floods out through these wounds in a geological instant, creating temporary order in technoecosystems at the surface. Geothermal technoecosystems bring wealth to men by controlling and destroying structures and energy patterns underground. ■

Alternative Rural Sanitation Systems SURVEY

The California State Office of Appropriate Technology has received funding for a six-month study of individual and small community sanitation systems. The initial stage of the study will be spent gathering information (not just from California) about existing systems so that it may be possible to prepare reasonable and comprehensive guidelines for dry toilets and their associated greywater systems.

We intend, with your help, to identify as many working systems as is possible, and develop guidelines from them that may be broadly applied by local or State health departments. The knowledge and experience of all those who have been involved in the avant garde of alternative sanitation is essential to the success of this study. We need your support and cooperation.

We are also acutely aware that alternative sanitation systems rarely have the sanction of health officials and, for that reason, we guarantee to you total confidentiality in any participation you may have in the study. There will be absolutely NO flow of names, locations, or any other personal information from us that could jeopardize your anonymity or your peaceful and private enjoyment of your property. We pledge this to you without reservation!

The enclosed questionnaire has a lot of obvious shortcomings but it is intended to provide us with the data to get started. Please feel free to lay a complete detailed description on us in your own way. If you happen to be the writing type, enclose as many pages as you need to tell your tale!

If the first six months of the study go well, we hope to be funded for further research that will include field surveys and biological testing of selected systems. However, since some visiting (only at your request) is to be done in the initial stage, PLEASE indicate in your response whether or not you would be willing to have your sanitation situation checked out by the study's representatives. Our "inspectors" are into exchanging information and ideas with you and expect the experience to be beneficial to all of us!

Thanks heaps.

L. Wade Rose
Project Coordinator

Harvey I. Scudder
Research Director

CUT OUT

Send reply to:

Alternative Rural Sanitation Systems
Office of Appropriate Technology
Room 800
2151 Berkeley Way
Berkeley, CA 94704

GREYWATER SYSTEMS SURVEY

(Waste water only from sinks, tubs, shower, laundry, etc.—no urine or feces)

Drinking Water: What is your source?
☐ Well ☐ Spring ☐ Creek Yours or neighbors? _____
☐ City ☐ Other _____

Fixtures: Do you have any of the following? How many?
☐ Hand sinks _____ ☐ Showers _____ ☐ Tubs _____
☐ Utility sinks _____ ☐ Washing machines _____
☐ Other _____
Are these fixtures separate or connected to one disposal line?
_____

Consumption: On an average, how much water do you use in a day?
_____ Gallons for _____ Persons
Does this vary much throughout the year (explain)? _____
_____

[more→]

Greywater System: Describe your system(s) — does it have a grease trap; septic tank; go directly on to the ground; into a trench or leach field; into a pond; thru a filter; into a sump?

_____

Re-use: Do you re-use the Greywater? _____ How? _____

_____

Problems: Do you have any (winter vs. summer, etc.)? _____

_____

Further Studies: Would you mind us talking over your system with you, or joining a two-year study? _____

Are you satisfied with your Dry Toilet and Greywater systems?

_____

Any future plans? _____

Any remarks about this questionnaire? _____

Home Habitat: Could you try a simple sketch of the area around your home; including location of the Dry Toilet, Greywater system, water sources, natural waterways, the home, outbuildings; in approximate scale. Slopes and compass directions would help us. If you need more space on this, or on any of the other questions, please attach an extra sheet. Thanks!

ALTERNATIVE TOILET SURVEY

(Dry or Non-Flush types)

Basics: Name _____

Location _____

Parcel size _____ How long have you used your Dry Toilet? _____

Use: ☐ Weekend ☐ Summer ☐ Year-round

☐ Other _____

Number of Users: Average _____

Maximum _____ Now _____

Type of Composting System: ☐ Drum ☐ Vault

☐ Other _____

Construction:

Materials _____

Waterproofing _____

Flyproofing _____

Venting _____

Windows _____

Aeration: Do you turn the pile? _____ How often? _____

What method? _____

If you have a non-turning system, how do you provide air to the pile? _____

Additives: Do you add any of the following:

☐ Urine ☐ Sawdust ☐ Hay ☐ Straw ☐ Worms

☐ Greens ☐ Ashes ☐ Dirt ☐ Scraps ☐ Other _____

Major Problems: Have you had any problems with your system, such as:

☐ Ponding ☐ Water table ☐ Disposal ☐ Flies ☐ Odors

☐ Leaks ☐ Access ☐ Seasonal ☐ None ☐ Other _____

_____

Have you been able to fix the problem? _____

How? _____

Disposal: How do you use or dispose of the finished compost?

_____

Details: What is the nearest source of water (such as a faucet) to the Dry Toilet? _____

How close? _____

Do you have a back-up system (flush toilet, pit privy, nearby friend)? _____

Any details on composting, storage; where, how, or whatever, that you would like to share with us? _____

_____

Flannel sheets!

My wife Pegge and I spent the summer in Denmark ('73). We took a side trip to Britain, leaving our camping gear in DK . . . so to keep ourselves warm on the road we purchased a cotton flannel sheet and wool tartan blanket. Returning to the US we tried unsuccessfully for two years to find 100% cotton flannel sheets, coming up with a 50/50 polyester blend from Montgomery Ward. These inexpensive substitutes are woven like gauze and pill badly giving the sensation of a rough towel.

Our all wood-heated house gets cooler than most centrally heated ones during the night. We have found that climbing into a 55° bed with our imported sheets makes the whole experience quite pleasant.

After months of writing and preparation we are importing English Cotton Flannel Sheets and Pillowcases and selling by mail order. Initially we are in the following, with modest ads: Sunset, Sierra Club Bulletin, Mountain Gazette and a number of eastern "country" mags.

I realize that CQ does not accept advertising. You do, however, review books and products which provide often simple and always creative answers to the problems which confront humankind. Flannel sheets are a "technology" that has been around for some time and is initially finding acceptance particularly with older people who remember them from childhood.

Any editorial considerations will be appreciated.

Friend,

Grant Dowse
Garnet Hill

Box 262
Franconia, New Hampshire
03580

Lemon, Blue, Rose, Green, Lilac and White

Twin (70 X 105)	$11.00 per sheet
Double (80 X 105)	12.50 " "
Queen (90 X 110)	14.50 " "
Pillowcases	5.50 per pair

Orange, Cherry and Multi-Stripe

Twin (70 X 105)	$11.50 per sheet
Double (80 X 105)	13.00 " "
Queen (90 X 110)	15.00 " "
Pillowcases	6.00 per pair

Guardian Smoke Detector

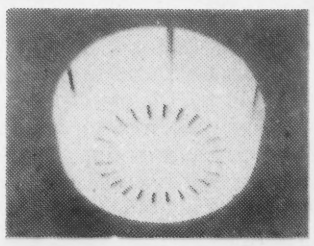
It's environmentally unsound to blow it by getting yourself and/or your property burned out so you have to start over. Last year about 12,000 of us were killed and many thousands more injured in home fires (a substantial number of which were started by careless smoking, by the way). Many fires were at night when there was nobody awake to notice. A smoke detector will notice for you. They've been around long enough now so that there is beginning to be some agreement amongst the several testing outfits as to which are the good ones. The Guardian FB1 is often mentioned as as being the most sensitive. It works by ionization, which is accomplished by a tiny radioactive source. Despite protests by alarmists (hee hee) some finicky tests have shown them to be safe enough unless you happened to be a fireman fighting a fire in a smoke detector warehouse. They're battery powered and thus can be mounted easily just about anywhere. They shriek when combustion products cross their beady eye.

—J. Baldwin

Guardian Smoke Detectors

About $50.00, sold only by your local safety equipment supply store or fire prevention company, or write to:

Pyr-A-Larm, Inc.
502 Bayview Dr.
Aptos, CA 95003



Living in One Room

Small is in fact Beautiful, or at least it can be if you're clever at using space. This happy collection of ingenuity shows what can be done. Some of the ideas border on being downright fiendish; disappearing kitchens and beds abound. Most rooms show that compact living need not mean lowered living standards. (We can vouch for that, we've been living in a 17-foot Airstream trailer, the Silver Turd, for 4 years now and like it fine.) It would be nice if the work shown here signifies the beginning of a trend away from Buick Architecture.

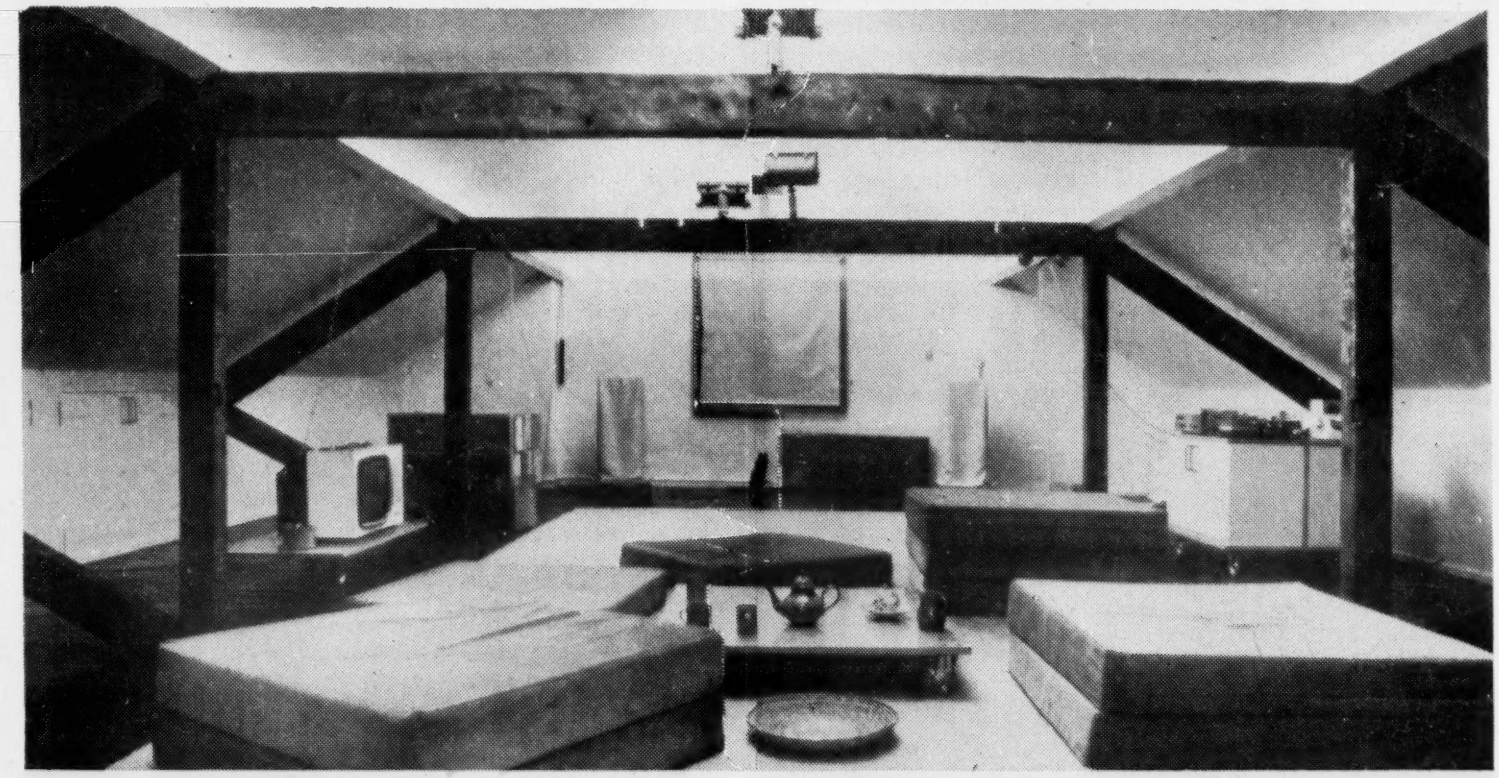
—J. Baldwin and Kathleen Whitacre

Living In One Room
Jon Naar and Molly Siple
1976; 150 pp.
$5.95 postpaid

from:
Vintage Books
455 Hahn Road
Westminster, MD 21157
or Whole Earth

Painter Kas Zapkus created this ingenious dish drainer to drip water directly into the sink, via a shaped rubber mat, saving valuable space and eliminating the bother of sponging the counter.

Every component part in the London attic of consultant/designer Michael Wolff moves. The cotton-covered foam-rubber cushions that can be combined into a bed are also used to sit on around a low coffee table that moves on casters, as do the TV table, the hi-fi speakers (covered in white cotton for visual muting) and the cabinet to the right, which houses records and hi-fi equipment. The entire scene can be cleared in minutes for a party or a business meeting.

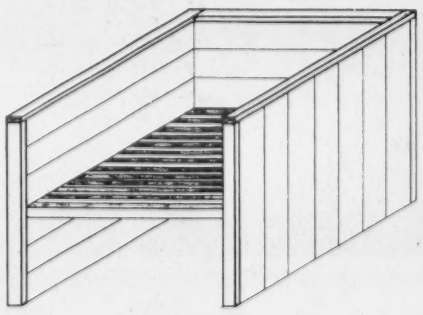


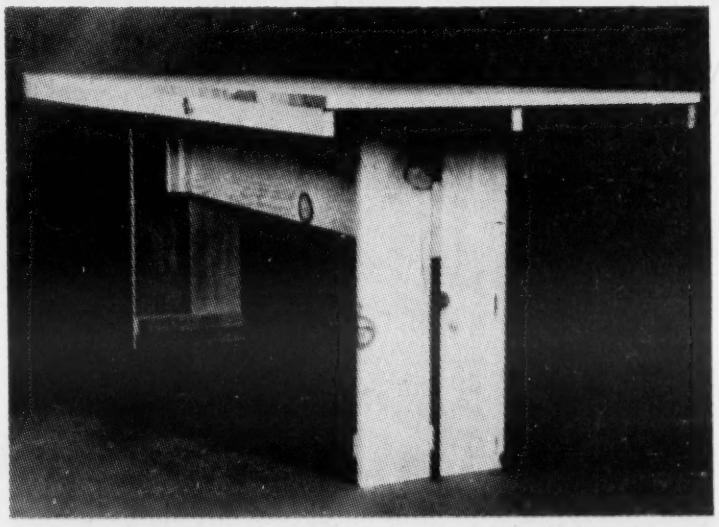
Instant Furniture

Though not quite as instant as a Middle Sears Roebuck couch from Salvation Army, these designs might help you take on a somewhat different attitude towards furniture and other objects that are expensive to buy, own and move. It might be the start of a New American Colonial style. The instructions are remarkably easy to deal with.

—J. Baldwin

Instant Furniture
Peter S. Stamberg
1976; 160 pp.
$12.95 postpaid
from:
Van Nostrand/Reinhold
Order Dept.
300 Pike St.
Cincinnati, OH 45202
or Whole Earth





The Underground World

BY JOSEPH TORCHIA

Photos by Paul Glines

Some people called him "The Underground Man." Some people called him "The Human Mole." Some people laughed at him and called him names and said he was crazy. His parents in Sicily thought all of America was laughing at him. One woman refused to marry him unless he built her a house above ground. He never got married.

His name was Baldasare Forestiere and he came to this country in 1902. He was 21 years old, the son of a wealthy Sicilian fruit grower, a man seeking his own fortune and personal independence in a new land. Little did he know that literally it would be "in" the land.

Fresno, California, in the southern middle of the Big Valley, is famous for being undistinguished. So was Watts in Los Angeles before the genius of Simon Rodia's backyard towers was recognized. Maybe it is only in such places that eccentricity can fully flower. There are lone arts and social arts. This is lone art – way out there.

"The Underground World" first appeared in the San Francisco **Examiner** *on Sunday, December 5, 1976, and is reprinted with permission.*

–SB

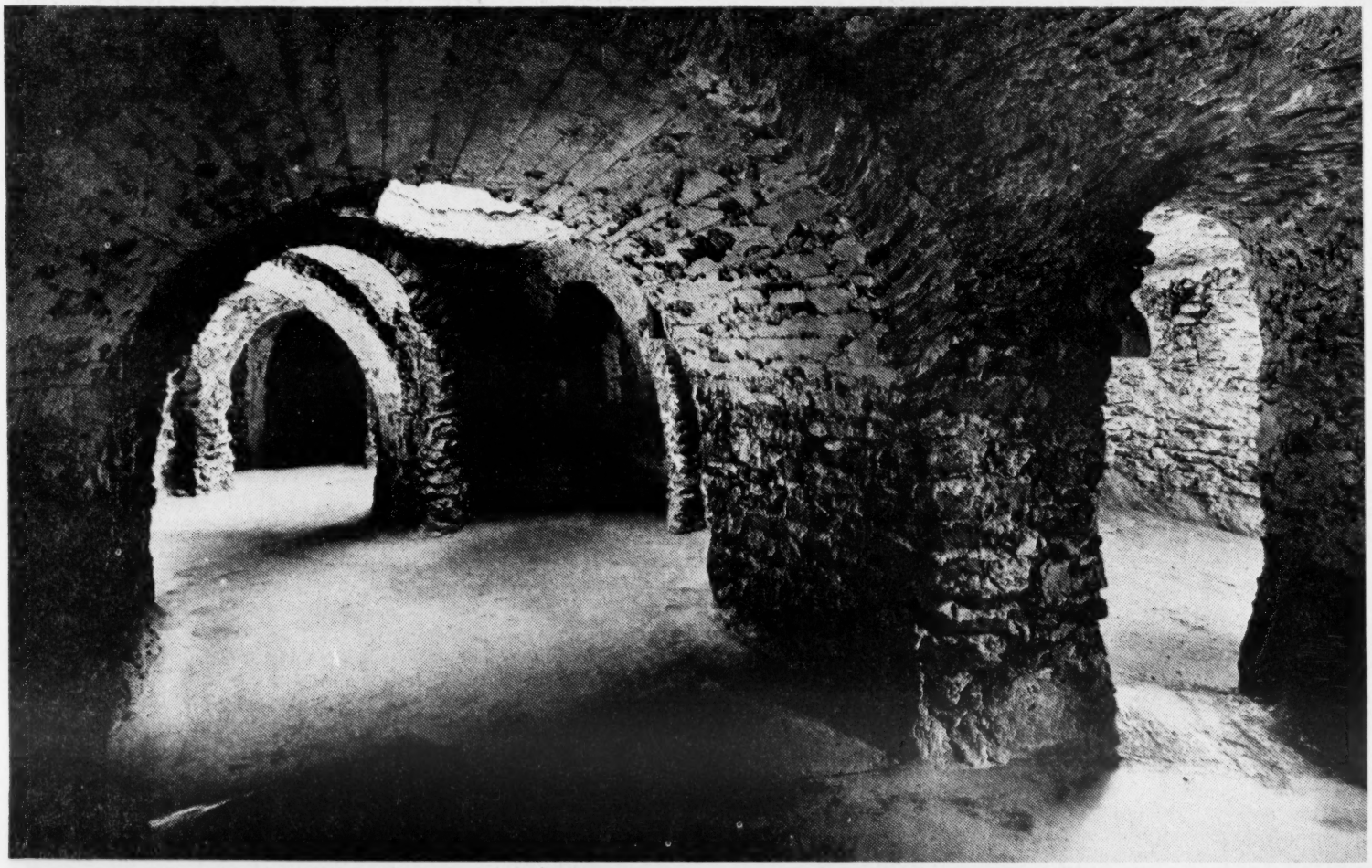
He didn't speak a word of English and the only work he could get was digging the New York subway system. That was the beginning of his underground life. It didn't take him long to realize all the money he made went for food and rent and the only land he dug belonged to the city of New York.

He wanted his own land. He wanted vineyards and orchards. He wanted to plant his own roots. In 1904 Baldasare Forestiere moved to Fresno, where he bought 700 acres of land – only to discover that beneath the surface was a layer of hardpan, the third hardest natural rock in the earth. He cursed his luck almost as violently as he cursed the hot California climate he wasn't used to.

Then he got an idea: Why not live in this hard ground? It wouldn't support fruit, but maybe it would support him – protect him from the harsh California sun.

So he started digging. Forty years later he was still digging.

When he died of pneumonia in 1946, he had completed more than 90 underground rooms,



For 40 years, Baldasare Forestiere carved more than 90 underground rooms out of the hard earth near Fresno.

# of Baldasare Forestiere

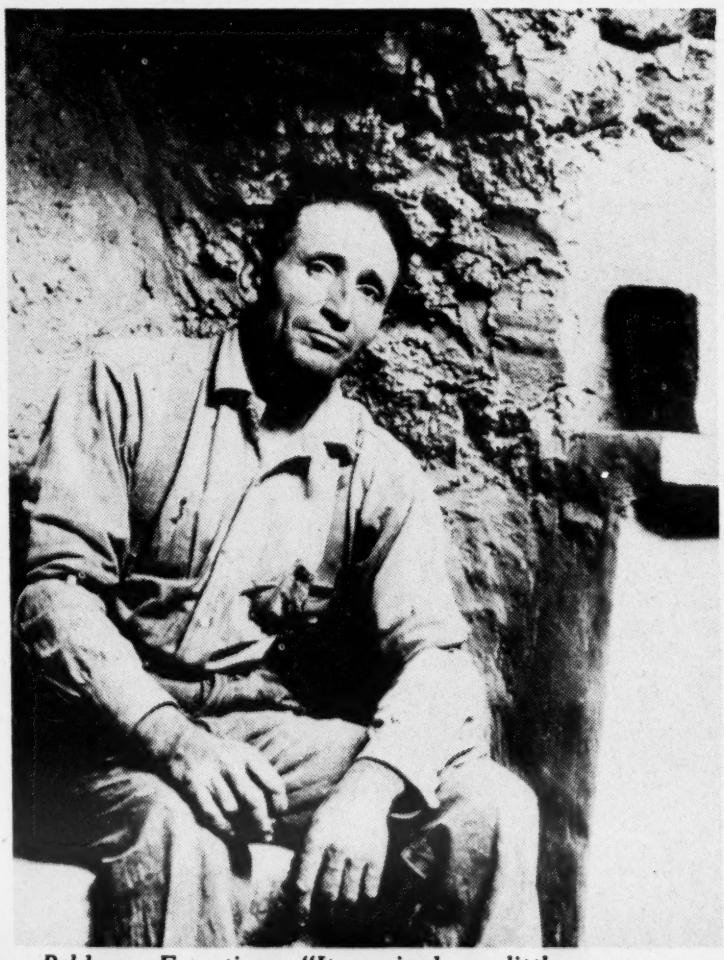
passages and courts covering seven acres of land. He dug a chapel, an 800-foot automobile tunnel and a huge, 5,000-square-foot room — all underground.

"All that I have done is for nothing, for it required very little money, perhaps $300," he told a reporter for the Fresno Bee in 1924. At first he supported himself by working for other farmers. But in time he had his own fertile land and other people working for him, so he could spend most of his time digging.

And dig he did. He dug most rooms 10 feet underground, each with an open hole to the surface for light and water, and each with a fruit tree in a planter immediately below. He had one level 23 feet below and another few rooms 35 feet below the surface.

His main tools were hand tools: A pick, a shovel, a wheelbarrow. A horse and small scraper were used to move large rocks. Sometimes he would allow his brother Giuseppe to help with the cement work, but as soon as Giuseppe left he would completely redo his brother's work.

"I have been doing this for fun," Baldasare once told a reporter. "Money? What do I want with money? If I had a million dollars I couldn't spend it. Neither could you. Nobody could. I am broke but the cavern and all the work it represents are worth more than a million dollars to me."



Baldasare Forestiere: "It required very little money – perhaps $300."

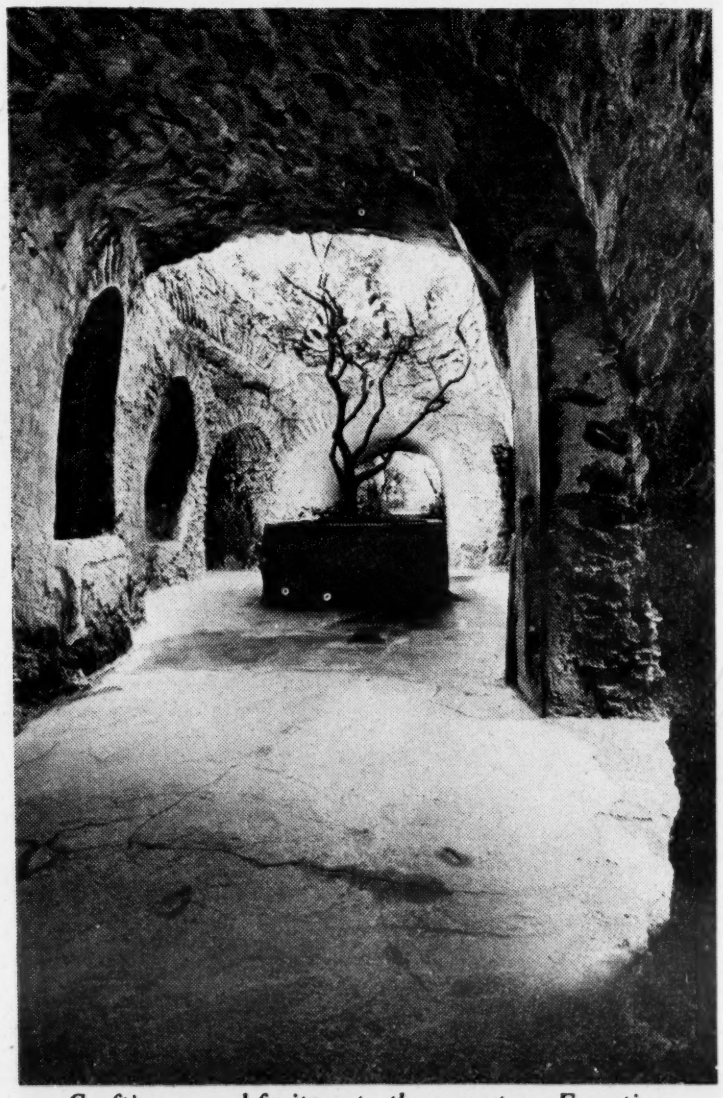
Today it's called the "Forestiere Underground Gardens," located just seven miles north of downtown Fresno, two blocks east of Freeway 99 on West Shaw Avenue.

At first all you see are a bunch of "bushes" growing out of the dirt. Look closer, however, and you'll notice these "bushes" are actually the tops of trees growing from deep underground. There's one citrus tree 22 feet below the surface – just *one* tree growing seven different fruits: Navel oranges, Valencia oranges, cedrons, tangerines, sweet lemons, sour lemons and grapefruit.

There are also pomegranate trees and pear trees and persimmon trees and almond trees and palm date trees and mulberry trees and strawberry trees. Yes – Baldasare Forestiere grew strawberries on trees!

There are red grapes and green grapes and rosemary and myrtle, all growing underground, all growing toward the skylights that Forestiere planned, shaped, controlled, designed to give incredible life to his underground world.

There are fireplaces and benches and shelves etched out of the stone walls. There are arches and tunnels and grottos and patios and gardens everywhere. There's a pond where Forestiere used to store fresh



Grafting several fruits onto the same tree, Forestiere turned his underground home into a lush garden.

fish he caught in the San Joaquin River until he was ready to eat them.

There's another pond – a glass-bottom pond 15 feet below ground where he used to keep exotic fish. And 10 feet below that is another area where he could sit and look up at the fish and the skylight above them.

There's a well for water and "sump pits" to drain the winter rains and an underground bathtub with a hose leading to a metal tank above ground where the sun would heat his bathwater. And there's one huge room, 35 by 100 feet, which Forestiere dreamed of turning into an underground restaurant, but he died before it was completed.

"There's a whole lifetime down here," said Rosario ("Rick") Forestiere, now 48, who used to play hide-and-seek in "Uncle Baldie's" caverns. "There's one hell of a lifetime down here."

Rosario remembers his uncle well. He remembers how Uncle Baldie would bless and kiss each plant he put into the soil – each branch he grafted onto his citrus trees. He remembers his uncle making his own wine and calling it "Sangre di Christo" – "the blood of Christ." He remembers Baldasare in front of his old radio listening to Lowell Thomas. Or sitting in his underground study reading Eleanor Roosevelt and Booth Tarkington in McCall's Magazine. "He was never at a loss for words," Rosario said. "He read a lot and used a lot of big words I never understood."

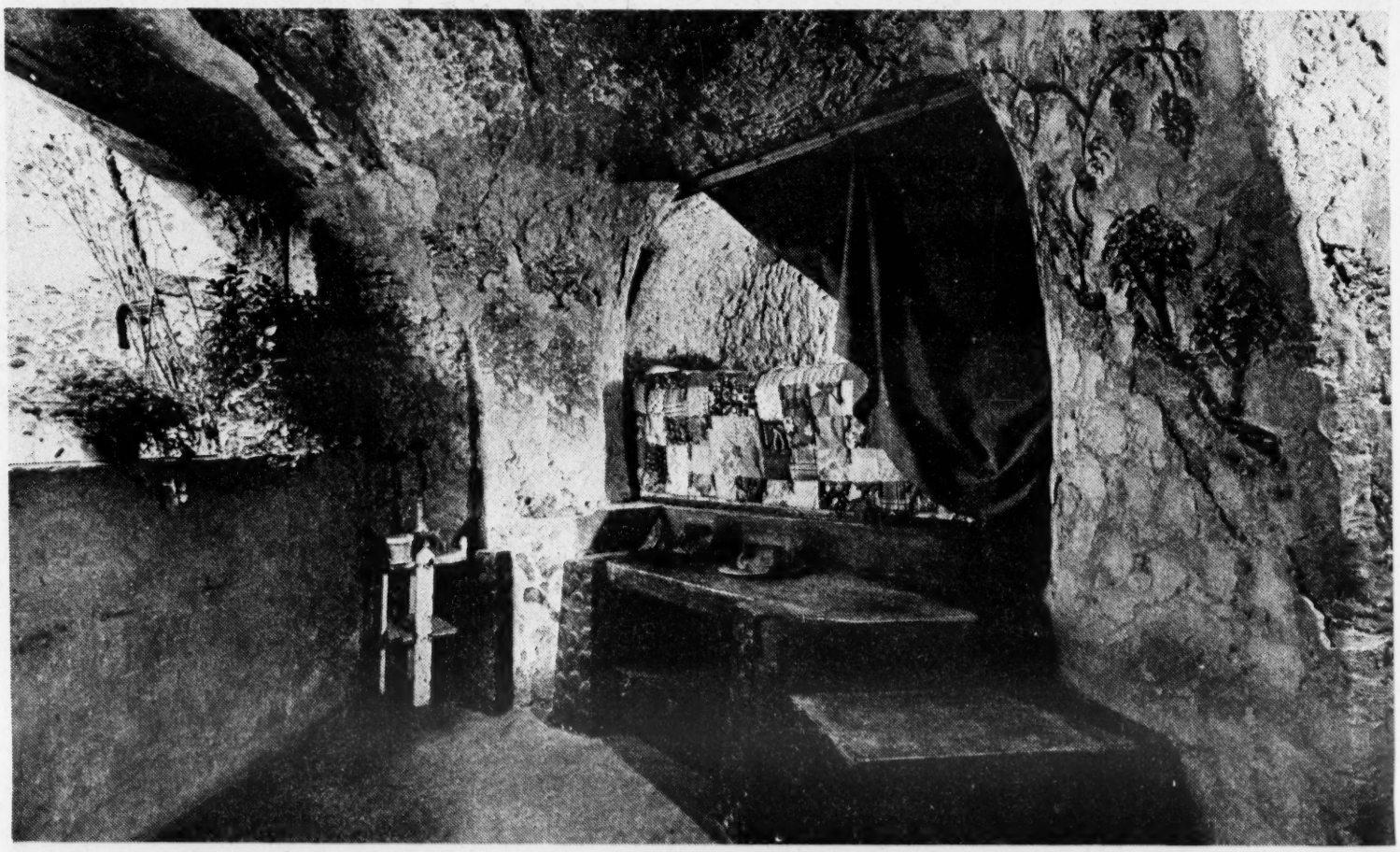
During World War II Baldasare violently criticized the American government for putting his Japanese neighbors in detention camps. "Everyone thought he was unpatriotic," Rosario said. "I remember how ashamed I was of him. 'How can you respect a government like this!' he used to say. 'How can you respect a government that puts its own people behind fences!' " Because of that, Baldasare refused his American citizenship and died an alien.

"I used to love being with him," Rosario said. "I used to love watching him work. I remember once I criticized him for not making his underground rooms perfectly round. 'Any fool can take a piece of string and make it round!' he shouted. "To make it crooked and have it look nice – that's the real work!' "

Today Rosario and his wife Lorraine keep five of Baldasare's original seven acres open to the public. But because of financial problems, the Underground Gardens will not be open daily until the summer of 1977, except for the week between Christmas and New Year's, when they will be open to the public at large. Now admission is restricted to advance group reservations only.

"God, you'll never know how much I regret never meeting Uncle Baldie," said Lorriane, who married into the Forestiere family long after Baldasare had died. "And yet I feel like I *have* met him," she says. "I keep looking at these walls and seeing his life all around me. I keep saying: Hey, Baldasare – thank you! Thank you for opening something up in me!

"I can't help it," she says. "You can feel it. You can sense it. Look around. Look at these walls and arches and gardens. Look at this world down here. You can see how much he loved people – you can see how much he loved life!" ■



The bedroom: Arch leads to outdoor bathtub

Malcolm Wells comments

(See Wells' "Underground Architecture" in Fall '76 CQ)

Re: Forestiere's Underground Gardens

Dear Mr. Brand:

Your request for a technical analysis and "how-to" evaluation of Forestiere's work gives me a perfect opportunity to use one of my three[1] favorite architectural quotations,

Buildings should speak for themselves[2]

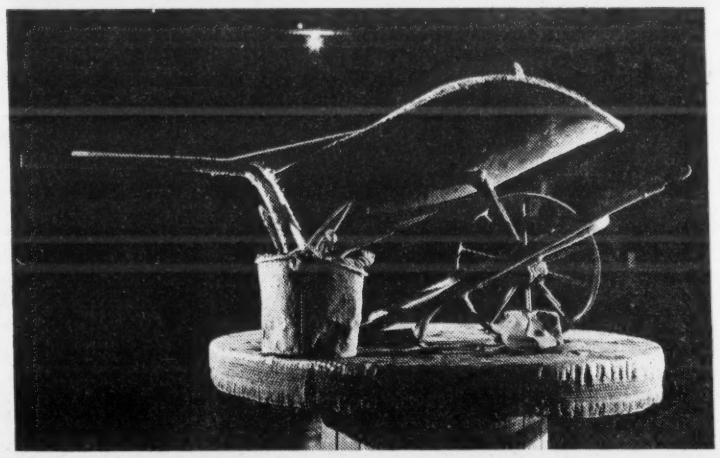
Are Forestiere's Underground Gardens actually buildings, though? Bernard Rudofsky calls such spaces architecture by subtraction. Well, whether they're buildings or not, they do speak for themselves — eloquently — if what I see and read in the **Examiner** are to be believed. Here is space so simple a glance is all anyone needs to understand it completely.

We architects spend from five to eight years in college, and another three to five years in apprenticeship, before the state considers us ready to offer our gems to the waiting public, and look what we give it! Thirteen years of training and the best we can produce are metal and glass boxes standing in parking lots! Forestiere demolishes us with a wheelbarrow and a dream.

You want a technical analysis of his work? I'll give you one: there it stands. The Gardens exist; what more can I say? Do we need computer studies to prove these fantastic spaces successful? How many others, covering thousands of square feet and costing only $300, can you name?

How to do it? Easy: dig.

No, it's not as easy as that. Only a Forestiere could do such things. I might try, and get nothing but cave-ins. Or tap an underground river. You see, he knew. You look at those gardens and it's obvious. They almost seem to have existed before Forestiere arrived. He simply set them free. The trees that grow there, the love of life you feel, and the strange attraction of the Gardens, all



The tools: All the work was done by hand

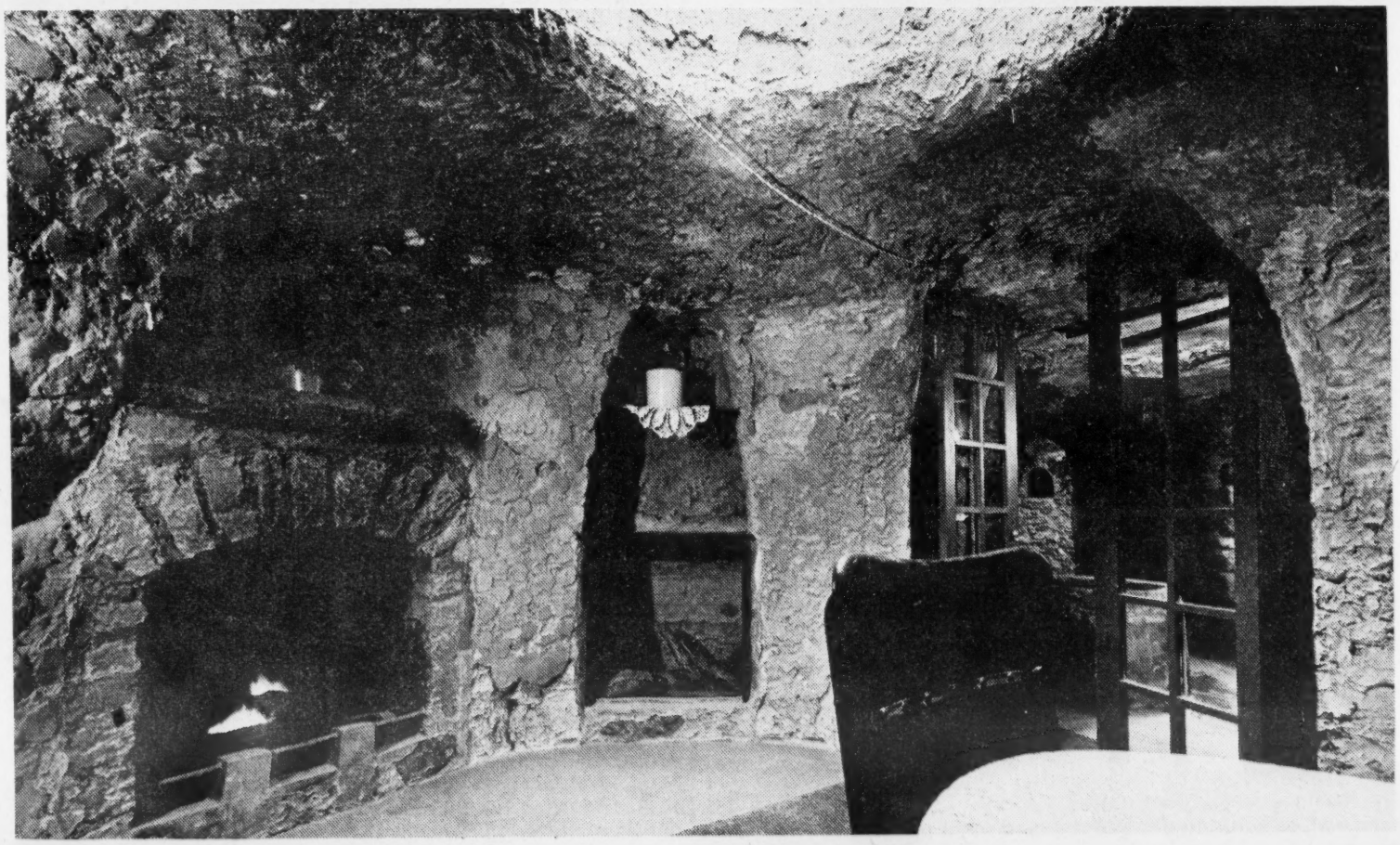
indicate that this was not your average ditch-digger. Not by a long shot.

I'm fascinated by the untutored genius that appears now and then, even in the humblest of people, driving its host against all odds to do what he must. Rodia of Watts. Gaudi of Barcelona. Forestiere. Speculation about the source of such gifts inevitably leads to a confrontation with the unanswerable, but it also gives us, I think, our best reason for hope.

Malcolm Wells
Cherry Hill, New Jersey

1. The other two: Thoreau's ". . . all work passes out of the hands of the architect into the hands of nature, to be perfected." And now this gem from Forestiere: "To make it crooked and make it look nice — that's the real work."

2. Was it Wright who said this? I forget, but it's right on target.



The underground gourmet: Forestiere's simple kitchen

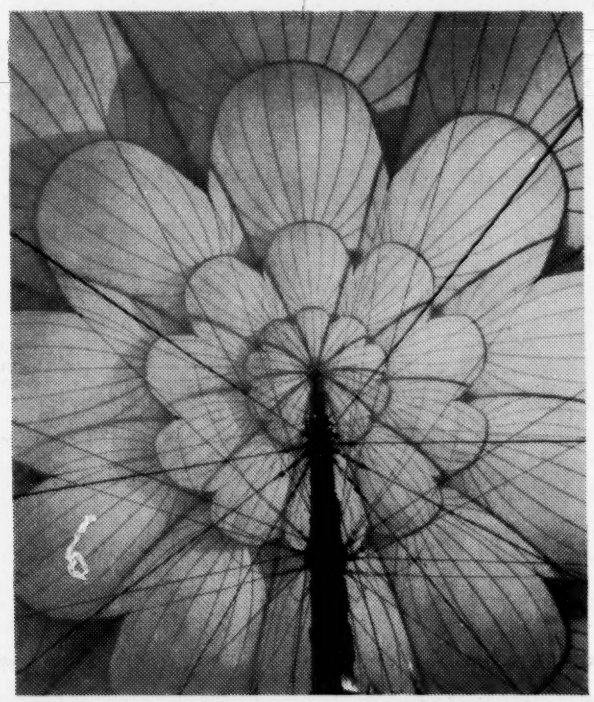
Pneumatic structures

The modern Big Bad Wolf doesn't huff and puff, he pulls the plug on your blower or maybe takes a bite out of your dining room wall. It wouldn't be the house coming down that would get you, though. Pneumatic structures have advanced far beyond being threatened by simple failures. They've gone beyond the pool-cover shape too, as this exciting presentation shows. And the presentation goes beyond photographs (707 of them) by including pattern theory and an explanation of how to calculate stresses. This is the most thorough book on the subject I've seen. (Something pneu on every page, har har.)

—J. Baldwin

Pneumatic Structures
Thomas Herzog
1976; 192 pp.
$30.00 postpaid

from:
Oxford University Press
16 - 00 Pollitt Dr.
Fair Lawn, NJ 07410
or Whole Earth



Inflatable hoist for lifting persons or goods. Design and manufacture: Ministry of Technology, Research Development Establishment (England), 1970.

A cradle made of a pair of rollers and a strap device for carrying goods is fixed to a fire hose. The rollers are closely fixed so that they clamp the hose airtight. If this is inflated from one end, then the rollers and the goods travel to the other end. To raise a man of average weight vertically, a positive pressure of 2,000 mm of water pressure is required (the maximum load capacity is 280,000 mm of water pressure).

The British Central Electricity Authority uses the inflatable hoist for the inspection and maintenance of overhead lines. Small rockets shoot a retaining line over a suitable attachment point. The compressor is carried in the car.

An Introduction to Heat Pumps

The heat pump is one of those devices that seems too good to be true: you put in some energy, but you get more energy out than you put in. Or at least you should. Heat pumps are also eminently compatible with many solar heating/cooling systems (see Ecosol, this issue). How they work and how to utilize them is neatly laid out here in easy language. The author makes so bold as to suggest that the auto industry should tool up to make heat pumps! In any case, we're going to see a lot of heat pump activity in the next few years, so it'd probably pay you to bone up a bit. You will have to translate from the British here and there, though.

—J. Baldwin

An Introduction To Heat Pumps
John A. Sumner
1976; 55 pp.
$3.00 postpaid

from:
Conservation Tools & Technology Ltd.
161 Clarence St.
Kingston-upon-Thames
Surrey, England KT1 1QT
or Whole Earth

The most suitable form of solar heat to use with a heat pump is solar heat stored in the earth. It is strange that the use of this immense source of heat is so often decried. It is held that the average house plot does not contain sufficient land for the necessary buried pipes. Yet only 110 sq. yards is required, as a minimum, and the land remains available for normal use as a lawn or whatever. It is also held that the cost of installation is too high, i.e., £300, but, since the ground coil heat pump ensures a value of C.H. = 3 compared with a value of C.H. = 2 when using ambient air, there is an annual saving of one-third in electricity consumption. Further, the maintenance of a suction gas pressure and volume with practically no variation, in place of the 40 - 60 per cent variation when ambient air is used can result in a compressor life (worth more than £300) of 20 years instead of, perhaps, 5 years.

•

The provision of one million heat pumps to replace direct electric heating would reduce coal and electricity consumption at power stations by 10 million tons of coal and give a peak demand of 4500 MW instead of 13,500 MW (allowing no diversity). Assuming that it was desirable, for financial reasons, to replace the diminished loading and consumption which would result, 2 million heat pumps supplied to consumers using oil firing would be necessary thus giving a further saving in oil consumption of 9 million tons. The saving of 25 million tons of coal equivalent per year thus achieved would then have to be equated to the inevitably growing amount of surplus automobile plant and non-productive labour which would be capable of producing 3 million heat pumps. The materials and fully productive labour required to build a mass produced domestic heat pump are of the order of 25 per cent of those required to build a motor car. Since a heat pump can restore as much fuel as is wasted in a motor car the discussion changes from one of 'cost' to the 'value' of a heat pump.

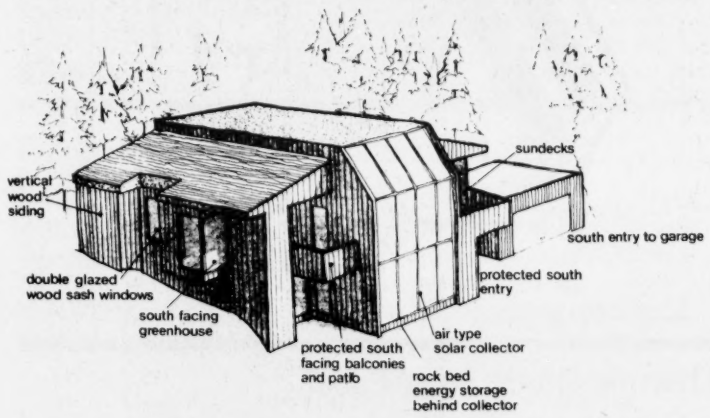
Sun Earth

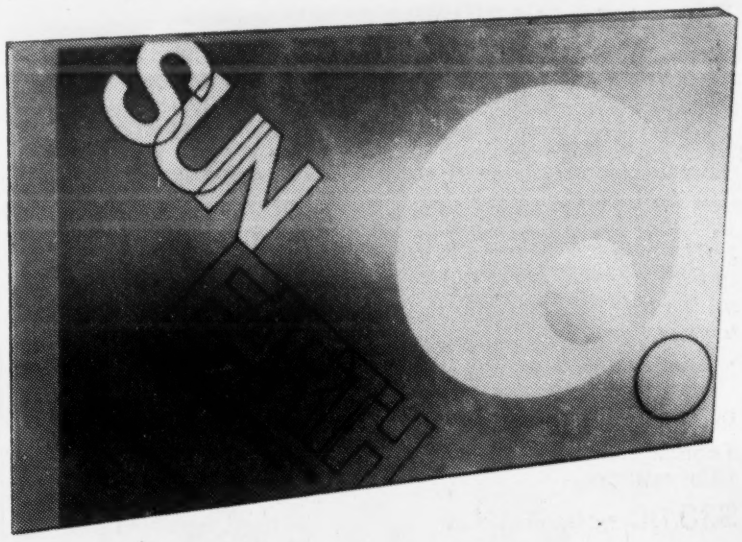
Oh no, not another solar home book! And a general "beginner's" one at that. What makes this just a hair different, and well worth looking at in passing at least, is that an architectural style is very strongly presented by means of actual examples. It's a style that I bet will take hold in the next few years and become the path through which solar homes and offices become esthetically acceptable to Mr. & Mrs. Front Porch. The bold professional-architect drawings will make things clear to persons who just can't get by the usual dry technical diagrams in other books. I do wish someone would come up with a solar building workbook with worked-out real life problems though. That's something we really need.

—J. Baldwin

[Suggested by Joe Eddy Brown and Carolyn Pesko]

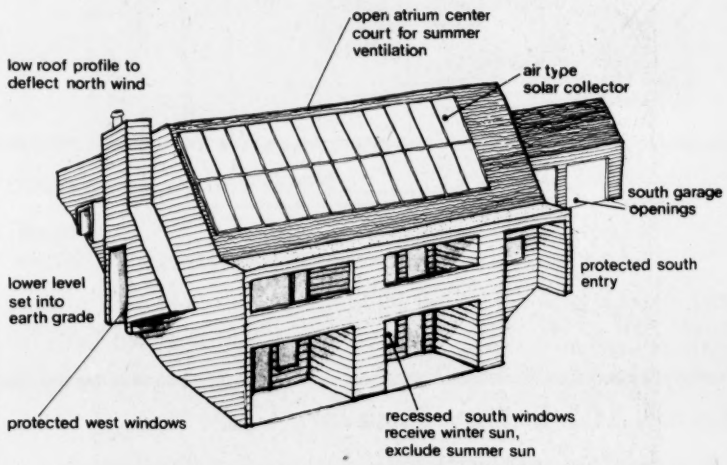
In snowy regions, provision should be made to prevent snow-drifts from obstructing entrances. Reflective surfaces can be used above or around the door area to accomplish this. These should be calculated to allow entryways to be heated by the sun during the winter months and to be shielded from the sun during the summer. Care should also be taken to avoid directing the solar radiation into the eyes of people when they are exiting or entering. The reflection should be directed toward a flooring surface dark in color, to absorb as much energy as possible. Also, adequate drainage must be provided so that melted snow doesn't freeze in the entryway at night.





Sun Earth
Richard L. Crawther A.I.A. et al
1976; 232 pp.
$13.75 postpaid

from:
Ears
2239 E. Colfax
Denver, CO 80206
or Whole Earth



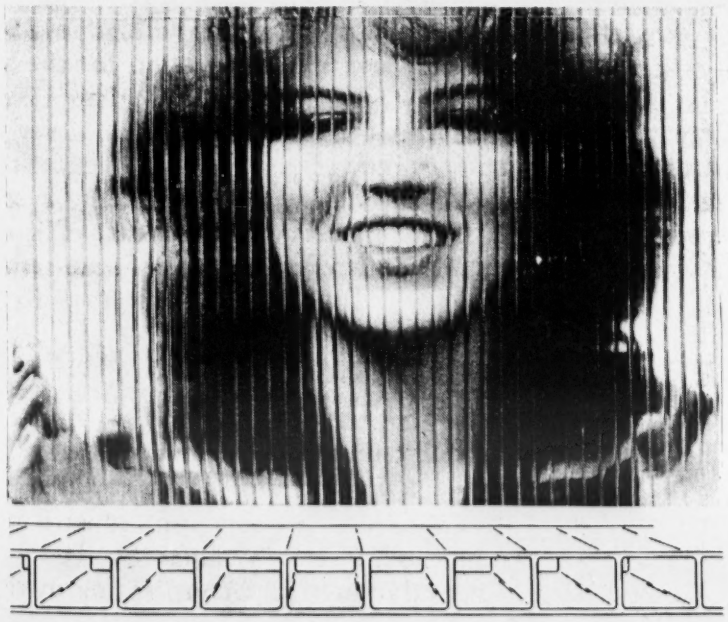
Tuffak-Twinwall

Rohm & Haas, makers of Plexiglas, have come out with an insulating double walled Polycarbonate sheet. It's very similar to that used by the New Alchemists P.E.I. Ark (CQ Winter '76). I expect it'll see a ready market.

—J. Baldwin

Tuffak-Twinwall
see your local plastics dealer
or write:

Rohm & Haas, Plastics Dept.
Independence Mall West
Philadelphia, PA 19105



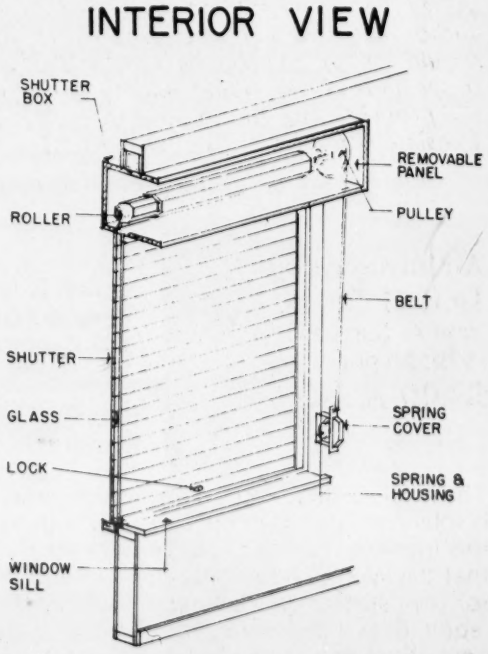
Serrande Shutters

These are roll-up "shutters" so often seen in Europe. You can roll them all the way up or down, or spread the slats apart a bit for controlled sun and view. They repel heat, wind, noise, rain and snow and should help reduce the load on furnace and air conditioner. They make it tough for burglars, too.

—J. Baldwin

Serrande
$3.00 /sq. ft.
(approx.)

Catalog from:
Serrande of Italy
P.O. Box 1034
West Sacramento
CA 95691



Shurcliff's last catalog

To Editor, CoEvolution Quarterly

Review copy of **Solar Heated Buildings: A Brief Survey**, 13th ed., herewith. It costs $12 postpaid.

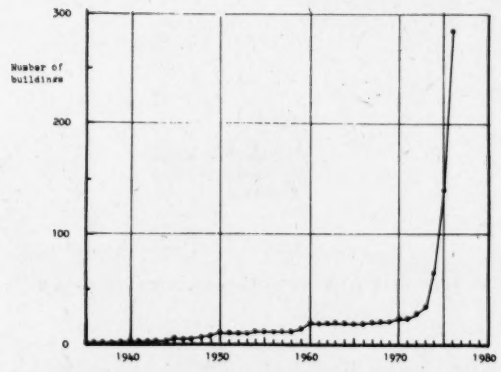
Comparison of 13th edition with the (now sold-out) 12th edition:

12th edition had 212 pages, described 220 solar bldg., had no photographs; stapled (not bound).

13th edition has 330 pages, describes 319 solar bldgs., has 85 photos (79 of them by Peter Hollander), and has std. tape binding. 100 of the accounts of solar buildings are entirely new.

This is the final edition. I shall write no further comprehensive books — because there are getting to be so many solar buildings.

Wm. A. Shurcliff
19 Appleton St.
Cambridge, MA 02138



RAPID GROWTH IN SOLAR BUILDINGS

The number of solar heated buildings complete in USA in the single year 1976, namely 146, exceeds the total number completed in all the preceding years, namely 140.

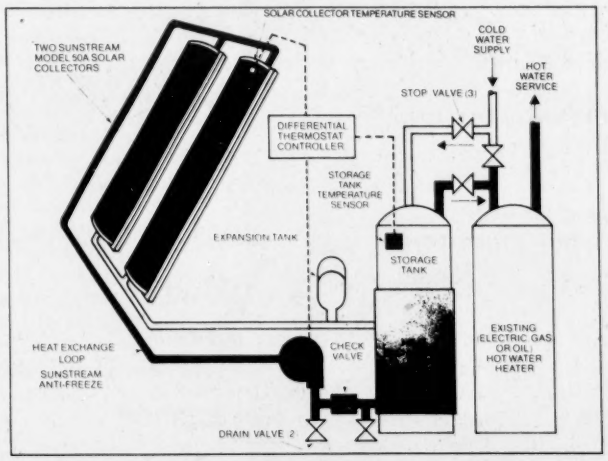
Grumman Sunstream solar hotwater system

The biggies get into the act at last with all the goods and bads such attention implies. The collector is a more-or-less conventional flat plate affair used primarily as a hot water heater booster. What's new is having a huge corporation making and marketing it. That in itself together with a typically competent big-corporation product finish, should generally upgrade public confidence in the entire industry. Not so good is that many small entrepreneurs who brought in that industry will now be driven out by it, thus suppressing innovation at a time when it is needed most. It will be interesting to see how this and other expensive solar hardware fares. How many thousand-dollar water heaters can you sell?

—J. Baldwin

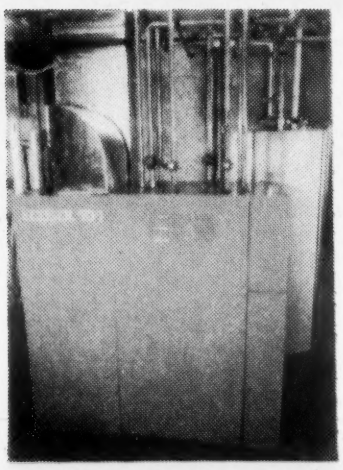
Grumman Sunstream

Information from:
Sunstream
4175 Veterans Memorial Hwy.
Ronkonkoma, Long Island
NY 11779



Ecosol 101 Energy Recovery System

"Sorry buddy, we don't do that kind of work," has been heard all too often by people trying to get local contractors into solar hardware installation. The local banks likely have a similar attitude; they're being cautious about machinery they're not familiar with. The Ecosol shouldn't scare anyone, including your accountant. It combines solar-collector fed hot water heating with a "furnace," your choice of fossil fuel back-up system, and an air conditioning unit (not solar powered). The operation is controlled by an on-board computer that optimizes everything and has a place to plug in cassettes to record what's going on. It also has a jack for a diagnostic device, rather like on a late Volkswagen, that should make service easy. Most important, though, is that the Ecosol is in one neat box all wired, piped and ready to go. The contractor only has to hook it up. Less mystery means less acceptance troubles. A 7 - 8 year payback is claimed in an Ohio climate. This sort of thing is probably the wave of the future, especially combined with collectors such as the Grumman, plus a few imaginative bankers.



—J. Baldwin

Ecosol 101 Energy Recovery System

Information from:
Ecosol LTD.
17th Floor The Plaza
2 West 59th St.
New York, NY 10019

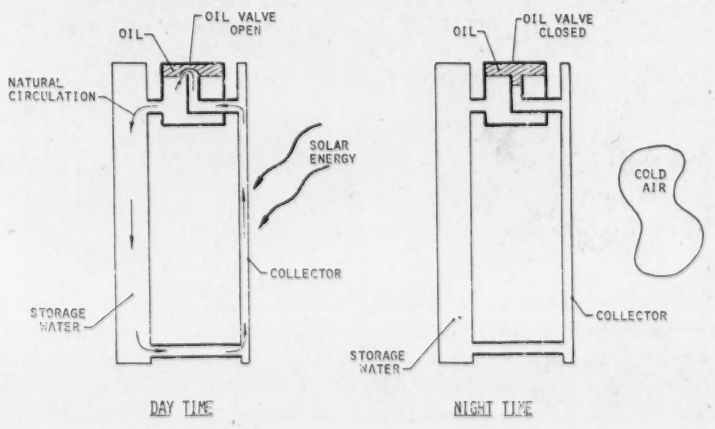
Thermic Diode Solar Panel

Diode? You mean like transistor? Well, sort of. The key feature of this nifty idea is a marvellously simple valve that prevents the solar heated water from back-siphoning at night and losing its hard-won BTUs. This scheme also has the advantage of being self-contained; it serves as its own storage tank. No pumps either. Its designer, Dr. B. Shawn Buckley of M.I.T., estimates a cost 30 - 50% less than "conventional" solar heating systems. Even if you're up to your eyes in solar hardware claims, I'd watch this one.

—J. Baldwin
[Suggested by Conn Nugent]

For more information watch Popular Science Magazine, or you might try a self-addressed, stamped envelope to:

Dr. B. Shawn Buckley
Massachusetts Institute of Technology
Department of Mechanical Engineering
Cambridge, MA 02139



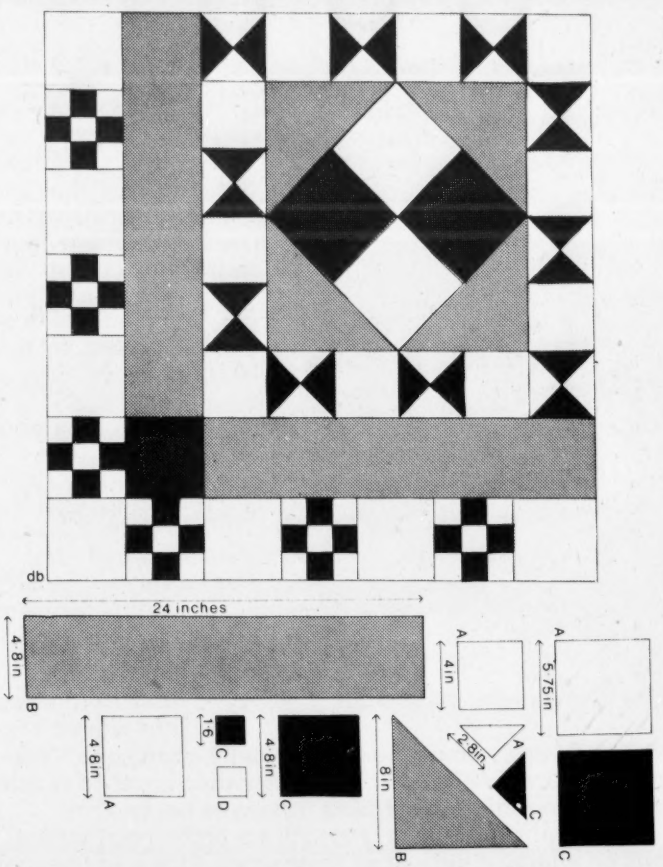
Pieced Quilts of Ontario

For quilters and collectors alike, in the torrent of quilting books few can match Dorothy K. Burnham's meticulous research, her love of textiles, and her ability to analyze and translate into working diagrams the dimensions, colors and patterns of arrangement that make a quilt "work" in a way others can readily see and use themselves. It's a beautiful little book and it's priced for you and me! (See EPILOG, p. 570 for her Keep Me Warm One Night *and* Cut My Cote.*)*

—Diana Sloat

Pieced Quilts of Ontario
Dorothy K. Burnham
1975; 64 pp.
$3.50 postpaid

from:
Royal Ontario Museum
100 Queen's Park
Toronto, Ontario, Canada
M5S 2C6
or Whole Earth



Traditional Pattern Units for Quilting

A treasure trove for quilters and a delight to the eye: leaves, feathers, flowers, bells, diamonds, cables, chains, twists and borders, all copied from North Country and Welsh quilts. There are 6 - 12 pattern units grouped roughly by category on a 30" X 36" Xerox page, ready for template making. How to use them:

> *The unbroken line in each drawing shows the template used to mark the pattern; other lines of sewing are marked with a broken line (------) and these must be marked on the quilt freehand. The size of any pattern can, of course, be varied to suit the particular design. The filling of many of these patterns are capable of infinite variety. There are many versions of some of these patterns and the experienced quilter may develop her own variations; that is how the traditional patterns have always developed.*

Write for their order list for more detailed description of designs and current prices.

Working Drawings for Quilting Frame with Ratchets

Full-size drawings for an interesting frame that's 2' 3-3/4" X 7' 10-1/2", with ratchets on the short sides. Allows you to work a narrow but full-length slice at a time, then turn the work to do another slice. Economical of space and wear 'n tear on the arms, not having to reach into the center of the bed-sized stretched expanse of quilt. (For rugs, Leclerc Looms once made a similar shorter version on legs that worked well.) No materials list nor instructions included, but the drawings are very clear. Price and description included with "Traditional Pattern Units for Quilting" order list.

—Diana Sloat

Traditional Pattern Units for Quilting
and
Working Drawings for Quilting Frame With Ratchet

from:
Council for Small Industries in Rural Areas
35 Camp Road
Wimbledon Common
London SW19, England

Berman Leathercraft

Berman Leather has a fine mail-order catalog. Prices on leather, buckles, tools, cements, Firbling dyes and finishes considerably lower than Macpherson's (CATALOG, p. 176), enough to justify shipping costs to the west coast. Selection of tools by manufacturer is not so extensive, but tool pictures are up to date — what you see is what you get, and you won't have to eat your heart out for a handsome old Osborne punch that's not been made for years.

For sandalmakers there are 3/8 brass and iron clinching nails unavailable at shoe findings suppliers on the west coast. Since I've never tried it, can't vouch for mail-ordering leather, but the selection, prices and pictures look downright tempting. In fact, so does the whole catalog.

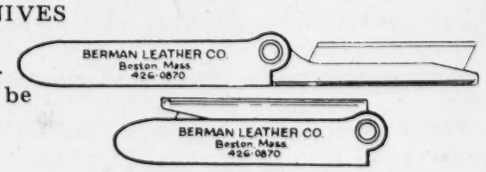
—Diana Sloat

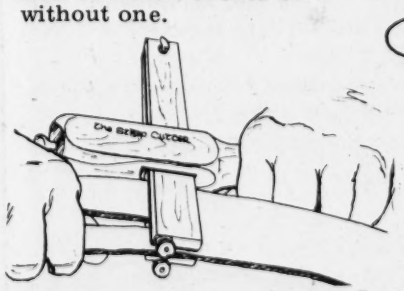
Berman Leathercraft
Catalog
$1.00 postpaid

from:
Berman Leathercraft
147 South Street
Boston, MA 02111

POCKET RAZOR KNIVES

Folds in your pocket for safety. No handyman or crafter should be without one.





WOODEN STRAP CUTTER

Cuts leather straps for belts, bags, etc. Wood construction complements the finest design we've ever used.

Attention hash pipe makers and smokers

Certain hardwoods contain toxic materials. Many cause severe allergic reaction in certain people. For example, zebrawood, ever so popular among hash pipe makers, contains a resin which, when burned, can cause severe respiratory problems. Be responsible to your customers! Watch out for zebrawood, cocobolo, iroko, certain mahoganies.

—Jim Nollman
Briones, California

Fellowship

Best-edited, -illustrated, -written, -feeling, and -enacted of all the activist magazines.

—SB

Fellowship
James H. Forest, Ed.
$5.00 /year
10 issues
from:
The Fellowship of Reconciliation
523 North Broadway
Nyack, NY 10960

I am not a large woman, nor an unusually strong one. Yet throughout my life, I have deliberately used anger to enable me to accomplish physical tasks otherwise beyond my strength — moving a piano, stretching a broken clothesline, lifting an injured child. In all these cases, I focused my anger on the situation — not on myself or my weakness, not on the person who "caused" the need, or the person who "should have been there when I needed him." I focused my anger on the demands of the situation; I enjoyed the rush of adrenalin and the surge of strength; and I exulted when I had accomplished an "impossible" task. My anger was transformed into a tool under my conscious control, and its use as a tool left me with a kind of glory.

•

Where is the thicket? Gone. Where is the eagle? Gone.
And what is it to say goodbye to the swift pony and the hunt?
The end of living and the beginning of survival.

—Chief Seattle, 1854

Gathered behind "spectres of death" wearing black robes and carrying coffins, walkers faced a line of mounted police at the Lincoln Memorial on Monday morning. Lengthy permit negotiations for use of the road and Memorial Bridge continued in the street, until the "Procession of Death" finally headed for the Pentagon. The billowing streamers of a Trident mock-up two football fields long symbolized the 408 nuclear warheads carried by each submarine.

Regional wages

I talked with a carpenter from California yesterday — he gets $10/hr. (union $14) to build a $160,000 house in Marin County, which I would get $5 or $6/hr. to build for about $30-40,000 here in Vermont. Such intra-mural comparisons are interesting, and succinctly eloquent. How about others, perhaps in CQ?

Yrs. sincerely,

Tom Keefe
Pownal, Vermont

Peter Van Dresser on Decentralization

Van Dresser: In the 1930s the decentralist movement was a fairly strong one in America. There are still echoes of it, and the word is still used quite a bit. In environmental and ecological and counter-culture contexts I think that word is no longer adequate. Decentralization is, in a sense, what is already happening with widespread suburbanization and movement of various kinds of factories to rural communities. We need not only to decentralize, but to recentralize in effective smaller communities capable of organizing their resources and exchange patterns within defined regions of natural resources. I think of these as micro-urban centers, small scale communities exhibiting a high degree of skill and diversification, urban in the sense of representing a great deal of knowledge and great ability in a small scale — as opposed to the conventional small town in, say, the corn belt, which is nothing but a distributing center for products produced elsewhere.

—*Solar Age*, Nov. '76

In Defense of Variety

The variously talented author, illustrator, and publisher of the excellent **Astronomical Calendar** *(Fall '76* CQ*) has started a little journal of real counter-culture.*

—SB

In Defense of Variety
Guy Ottewell
$6 /year, bimonthly
single issue, $1.

from:
Guy Ottewell
Box 648
Traveler's Rest, SC 29690

Russia, the dominant republic of the Soviet Union, pushes its own language at the expense of those of the smaller republics. In 1970 most of those republics decreed that all textbooks used and dissertations written in their colleges must be in Russian. By now, a large proportion of their populations speak Russian. The conspicuous exception is Georgia. There, hardly anybody speaks Russian. Even Russians there find they have to learn Georgian. Georgians regard their language (*Gruz*) as superior to Russian and love it passionately. So in 1975 the relatively new party chief in Georgia, Edvard Shevardnadze, pressured by Russia, imposed there the decree about Russian-language textbooks and dissertations. The result: a storm of open protests from Georgians.

•

Frenchmen are rapidly ceasing to wear berets. They feel them to be "embarrassingly ethnic."

•

Businessmen are planning to introduce American-style supermarkets to the Middle East, where they will — perhaps — wipe out bazaars and haggling.

•

Saigon has been officially renamed *Ho Chi Minh City*.

The Simple Life

I have this persistent fantasy of moving to a city, getting a small, white-walled studio apartment, and living with complete freedom. "The simple life" I call it, cutting down to essentials: a single bed, comfortable chair, desk, typewriter; a small kitchen, heat that just turns on, a toilet that flushes, hot running water, as much as I want. In my fantasy, I stride confidently down city streets, marveling at the pleasures of anonymity: thousands of people who don't know me and whom I'll never know. There's a library and bookstores with everything I've ever wanted to read; concerts, bars, and poetry readings. In my apartment, the phone never rings and for a few months, I don't go to any meetings at all.

Sitting in city apartments, picturing my bliss at such a life and jealously envying my friends, I tell them about my feelings. And they laugh or are shocked, because of course everyone knows the country is where you go for peace and freedom. And besides, I have left out earning a living, men on street corners, going nowhere alone at night, ever. I have forgotten I am a woman.

In the country, everything is personal; personalized. I am connected to all the life around me, and that's probably how things should be, but it asks more, takes more from me to live that way. I am responsible for my own survival, for heat, food, water, shelter. I have fifty-nine animals dependent on me for their survival too; and like a good pioneer woman I feed bottles to kids three times a day, five months out of every year. There's at least two meetings a week, and sometimes four. In a small community, there's only so many people to do what needs to be done. I don't pick who I'll work with, cause there's no choosing to do, and sometimes I am frustrated and lonely. The man at the post office, the woman at the store, my neighbor, a friend up the road, all know me and a good deal about my life, as I know about theirs. We have few secrets and a good deal of conversation. The price of land payments and taxes and animal feed and kerosene and truck parts comes to at least as much as a city life, and I've always worked another job off the farm to pay for it. For a sure laugh around here, all you have to say is "come to the country and lay back and relax."

I don't suppose I'd really trade, or not for long. I'm always saying I'll go to the city next month, when the kids are weaned, the sheep sheared, this issue of the magazine done . . . and I never get there. But once in a while the crazy writer in me gets desperate and even dreams nostalgically of cockroach-ridden, bath-down-the-hall, cheap downtown hotels — anyplace where I can be alone and responsible to no one and no thing but myself.

I guess I just want to say that, for me, the grass sometimes looks greener in Golden Gate Park.

—Sherry Thomas
Country Women, Dec. '76

Legacy Books

A distributor that acts as a "central source of folk material, domestic and imported, in-print, and out-of-print." They offer a complete line of books in the field of folklore, and selections include titles in folk songs, ballads, folk tales, superstition, witchcraft, antiquities, folk toys, and folk medicine. In addition to selling books, they offer to buy complete libraries, or single, one-of-a-kind items. Service is usually speedy, and they will try to locate hard-to-find titles not listed in the catalog. They ship internationally.

—Pete Hartman

Legacy Books
Catalog
Free

from:
Legacy Books
Box 494
Hatboro, PA 19040

Macdonald, Donald. A COLLECTION OF THE ANCIENT MARTIAL MUSIC OF CALEDONIA. Yorkshire, 1974. Reprinted from an 1822 collection, which was reprinted in 1855. (The "piobaireachd" melodies as played and written down by the author, a Scots piper of note). 25 fully notated bagpipe tunes. $15.00

Macdougall, Hamilton C. EARLY NEW ENGLAND PSALMODY, 1620 - 1820. New York, 1974. Reprint of Brattleboro, Vt., 1940. (A very valuable contribution to music history). $12.50

Folkdance & Mixed Pickles

I do not understand why you do not carry any of this information in your catalogue or magazine. Folkdancing is enjoying a great deal of popularity now, however some groups have been in existence for many years. (Some folkdance groups have their own folklore.)

—Rebecca M. Vanderpool

Folk Dance
Steve Zalph, Ed.
$3.00 /year
(8 issues)
from:
Folk Dance
P.O. Box 174
New York, NY 10016

Mixed Pickles
Raymond La Barbera, Ed.
$2.50 /year
(10 issues)
from:
Folk Dance Association
P.O. Box 500
Midwood Station
Brooklyn, NY 11230

Roundhouse Records

Have you looked everywhere for that "Guitar Shorty" album on the Trix label, but haven't found it anywhere? Are you dying for the latest Red Clay Ramblers release, but all the local record store carries are Donnie and Marie Osmond l.p.'s? Don't give up . . . Roundhouse Records is here! These folks carry the largest selection of traditional music recordings currently available on both domestic and imported labels. They offer records of blues, old-time, bluegrass, western swing, Cajun, and hillbilly jazz, along with Scottish and Irish music. All the records are available by mail, and they will ship overseas. Their prices will beat those in any record store I've ever been in.

In addition to the catalog, they also offer The Roundhouse Rag, *which periodically lists new releases and reviews. I'll bet you can't read an issue without cracking a smile.*

—Pete Hartman

Roundhouse Records
Catalog available on request. They might appreciate some postage.

from:
Roundhouse Records
P.O. Box 474
Somerville
MA 02144

The McPeak Bros. "Virginia" Dominion 1610 $4. Between the thesis of the Pinnacles and the antithesis of the IInd Generation there is a synthesis and I suppose that the McPeak Brothers represent some midway point between the two. Good job on May I Sleep in Your Barn, The Shoe Goes on the Other Foot; not so good on Darling Cora, Snowbird.

Yo' Momma!

A Collection of Dozens

ONWUCHEKWA JEMIE, TRANSCRIBER

Dozens are also known as sounding, hiking, screaming, ranking, woofing, capping, joining, *etc.: a verbal game of trading abuse, abuse mostly of female relatives. Played mostly by males. Among its central functions is social behavior control: channeled aggression, ritualized release of violence within rigid boundaries, following understood and accepted conventions. Despite its conventions, however, the dozens in real life is always flexible, ambiguous, double-edged: always, it could be used either to* amuse *or to* abuse *(and of course when it amuses, it amuses by abusing). Much like* boasts *and* threats, *dozens could be used either to start a fight (as an unequivocal expression of anger and provocation), or to inject light humor in a gathering of friends. When thus used to amuse, it is equivalent to a joke well told, an exhibition by two contestants (two at a time, at any rate) of superb imagination and verbal virtuosity before an approving audience.*

The audience is always vital. Whether the exchange ends as entertainment or degenerates into violence quite often depends on the audience. The performance is staged for their appreciation, and they are, in their responses, the final arbiters of victory or loss. At a good score they would break into laughter, or shout their approval: "Oooooo!!!" "Sound!!" "Rank!!" It is the crowd's comments, their derisive or approving laughter, that most readily turns the game into a fight. The crowd could channel the contest toward one goal or the other; or they could see-saw it, pushing it first in one direction, then in the other. To that extent the players are unfree; and unless one or both players simply bow out, a crowd that is determined to see a fight will manipulate them until it gets one.

—O.J.

"Hello brother! How's your momma?"

"What you mean, 'how's my momma?' "

"Well . . . I woulda said how's the family, but I know your pappy ain't been home for a month."

"That's right, motherfucker, he been living over at your momma's place since my momma threw him out."

"That ain't your poppa, that's my momma's hound-dog who looks so much like your poppa that even you couldn't tell them apart."

"Shiiiiiit! I coulda sworn that that was my poppa by the way your momma was letting him tell her what to do."

"That dog wasn't telling her what to do. My momma was just blowing a fart and you thought it was your poppa's barking mouth."

"You right. I shoulda known that my poppa was too good to bother hisself with a gas bomb like your momma."

"Shiiiiiit! My momma wouldn't even open the door to no trash like your poppa."

"That's news."

"What's news?"

"The news about your momma gettin' doors on her house."

□

Your mother goes to church, puts in a penny and asks for change.

□

Dozens is a Black ghetto art form that doubtless will find a popular audience soon enough (consider the shelf of books on graffiti). The collector of this sampling is a Nigerian who teaches African and Afro-American literature at the University of Minnesota in Minneapolis. This is part of his forthcoming book called The Signifying Monkey: A Collection of Afro-American Oral Literature.

Jemie's introduction and some of these dozens appeared in Alcheringa: Ethnopoetics *(Vol. 2, No. 1, 1976; $4.95 from Boston University Scholarly Publications, 775 Commonwealth Ave., Boston, MA 02215). At my request he kindly sent* CQ *some more and I mixed a few of them in. I've also stuck in two (Permalube and Round the Table) from Thomas Kochman's "Rapping in the Black Ghetto" (*Transaction *6:26-34) quoted in "Mamas and Motherfuckers" by Michael Lieber and Mary Agnes Lewis.*

Personally, I would like to have seen the Ford-Carter Debates conducted in this manner.

—SB

Willie: Hey man! How's your mama? I saw her last night, her hair was kinky, her draws were baggy, and she was drunk as a skunk. She looked so bad she would have scared a baboon to death.

Joe: Say man! That was your mama, who was looking so bad even you didn't recognize her.

□

Your mother's like a doorknob, everybody gets a turn.

□

At least I have a father and not fifty suspects.

□

Some like it hot
Some like it cold
Some who like your mama
Like it pretty damn old.

□

Your mother is so ugly, when she cries tears run down her back.

□

Your mama has so many wrinkles in her head that she has to screw her hat on.

□

Your mama's so ugly, she has to sneak up on a glass to get a drink of water.

□

Your mama's head is so bald that I can read her mind.

□

Man, you are so ugly you can draw a blister on a rock.

□

Your mama is like a balloon, always blown up.

□

Your mother's so ugly, she uses Preparation H for lipstick.

□

Your mother's got two left titties.

□

Your mother's teeth are so buck that she can eat apples through a picket fence.

□

If brains were dynamite your mother wouldn't have enough sense to blow her nose.

□

I don't want to talk about your mama, she is a good old soul. She has a double-barrel pussy and a cannon asshole.

□

Your mother's like a cup of coffee: hot, black, and ready to be creamed.

□

You so black you sweat Permalube Oil.

□

Your family is so poor the roaches leave at dinner time.

□

I walked into your house and your family was running around the table. I said, "Why you doin' that?" Your mama say, "First one drops, we eat!"

□

If you find a pair of slippers under your mother's bed, they're mine.

□

A lady said to your father, "Your fly is open." Your father said, "You noticed my fly was open, did you see that big shiny black cadillac?" The lady said, "No, but I saw a little volkswagen with two flat tires."

□

Your mother is very athletic, she does deep knee-bends over fire hydrants.

□

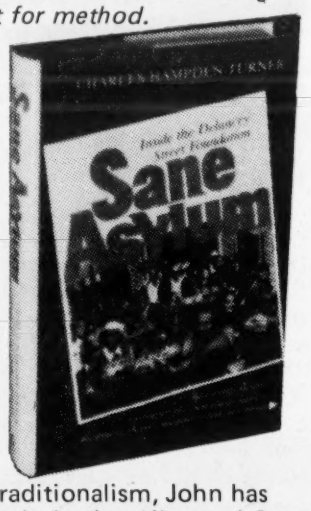
Let's get off the subject of mothers, 'cause I just got off of yours.

■

Sane Asylum

The spectacular success of John Maher's Delancey Street, the place of turnaround for social wreckage such as cons, junkies, hookers in San Francisco, is not just reported but made understandable — maybe even replicable — in this riveting book. Read it for dialogue, read it for method.

—SB



Sane Asylum
(Inside the Delancey Street Foundation)
Charles Hampden-Turner
1976; 291 pp.

$10.00 postpaid
from:
San Francisco Book Co., Inc.
2311 Fillmore Street
San Francisco, CA 94115
or Whole Earth

On the issue of radicalism versus traditionalism, John has grasped important truths from Martin Luther King and Cesar Chavez. As you try to change a social system, you must calm it *as* you change it, or it will go into shock and you will lose all control. Accordingly, you must especially emphasize tradition and continuity with the past in order to create a sense of movement *from* that past into the future.

•

"Tell me, Your Lordship, you construct theories in which even we may have a place?"

"Yes."

"You make connections between distantly related events?"

"When I can."

"And from this activity you get pleasure — even a few highs?"

"Why, yes I do!" It feels so good to be understood that I'm almost gushing.

"See!" he turns to the others in triumph. "Mad! *Absolutely* mad. Answers tangentially, shuts himself away and theorizes, makes connections, gets high: a theory addict! He's one of us. Welcome to the club!"

It strikes me as a fascinating comparison. The only remaining question being whether the bulk of social science theory is worth more than a hot flush of heroin and a lacerated arm.

John Maher: "*. . . I know you think that Claud is* bee-*utiful 'cause he once stole the crown jewels of Poland. . . . Well, Claud never stole nothing 'cept some food stamps that stuck to his fanny while he was sitting down on the job.*"

A Good Age

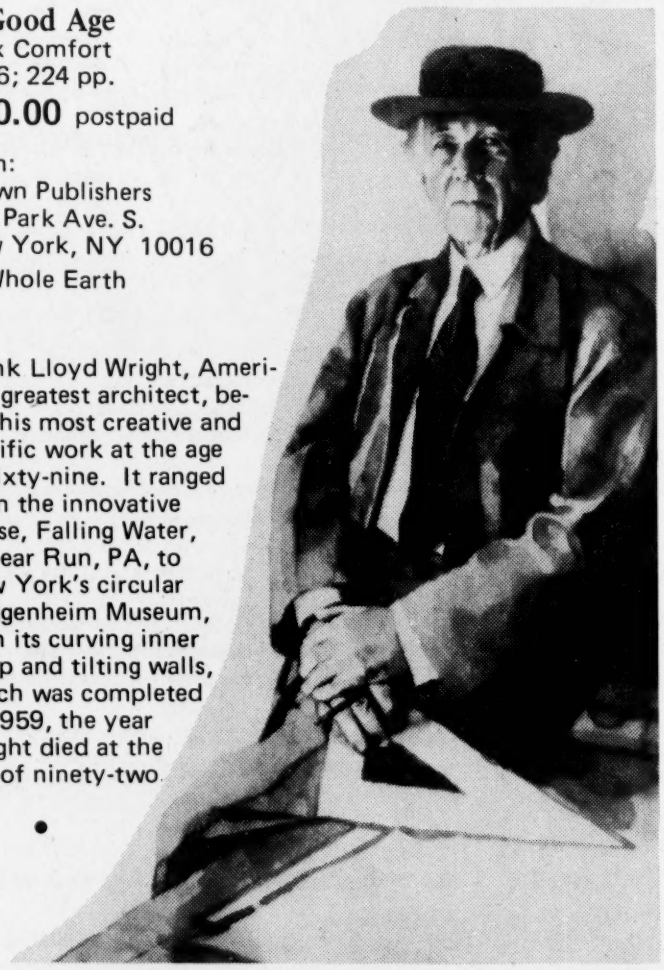
The best, most accessible work on the facts and fictions of oldness. Novelist, poet, gerontologist, and author of The Joy of Sex *(EPILOG, p. 608), Alex Comfort makes it clear that a good deal of what we think of as aging is not biological but social and psychological. Certain roles and patterns are imposed on people who have been around longer than some of the rest of us. They are arbitrarily defined as unintelligent, unemployable, crazy, and asexual, despite all evidence to the contrary. Dr. Comfort calmly suggests revolt.*

Beautifully designed and illustrated with portraits of robust oldsters. Fine marshalling of facts to show that a good deal of what I believed about aging was nonsense. In the long view, there are no young. Only the present old and (myself included) the new old.

—Tom Ferguson

A Good Age
Alex Comfort
1976; 224 pp.
$10.00 postpaid

from:
Crown Publishers
419 Park Ave. S.
New York, NY 10016
or Whole Earth



Frank Lloyd Wright, America's greatest architect, began his most creative and prolific work at the age of sixty-nine. It ranged from the innovative house, Falling Water, in Bear Run, PA, to New York's circular Guggenheim Museum, with its curving inner ramp and tilting walls, which was completed in 1959, the year Wright died at the age of ninety-two.

•

The best sort of exercise in terms of retaining one's powers is the kind you don't call "exercise" or pay someone to arrange for you. The best exercise is work. Old-time pioneers or peasants don't "exercise." An old Swiss farmer doesn't exercise, he only walks four miles each way up and down a mountain to get to the store or to bring in his cattle. There's something a little off about fat, idle people riding stationary bicycles to lose the flab they got through overeating and overdrinking.

Tel-med

This is a free service where you call in and ask, say, for tape number 31 on vaginitis, and they play it for you over the phone. A wealth of highly accessible and useful, though rather doctor-oriented (tapes are prepared by the San Bernardino County Medical Society), medical information.

There are now 82 Tel-med offices around the country, many with state-wide toll-free numbers. Write to the head office for the address and phone number of the program nearest you. Then call the local number and ask them to send you their free directory of tapes. (There are currently over 300 tapes, about 200 of them also available in Spanish. Let's see, what'll I listen to next — hay fever, vasectomy, or the rights of the nonsmoker?

—Tom Ferguson.

39 Feminine Hygiene Products — Can They Harm Me?
42 I'm Just Tired, Doctor
74 Why a "D and C"?
173 Menopause
182 What is a "Pap" Test?
694 Why a Woman Should Quit Smoking
889 Hysterectomy
898 Female Sexual Response

Tel-med
Information free
from:
Tel-med
Box 970
Colton, CA 92324

Small-Time Operator & Music Works

These are for members of the Acid-influenced Generation who are interested in small business. Both books grow out of the perception that small business is a good discipline for learning about life, for being open in your daily practice and for serving others. They both come from real field work.

Small-time Operator *is most of the financial record-keeping information you need for a small business plus the lined paper for one year with excellent instructions on how to use it; along with good advice on the key issues that are related to them (such as when the I.R.S. is likely to consider someone your employee).*

Bear (Bernard Kamoroff) lives the advice in the book. You can order a copy directly from him in Laytonville, he will package and ship it to you after he feeds the chickens and tends the garden. The first chapter has excellent general business advice that Bear collected in interviews with his clients.

Music Works *is a guide for musicians who want to understand how the business part of music operates and who would like to produce recordings for their own audience without going on the Big Record Company Stardom Rollercoaster. All the advice is based on years of experience with good examples. Some of the details are local (like the list of recording studios), but the core material is good anywhere.*

—Michael Phillips

Music Works
$5.00 /year
2 issues

from:
Music Works
Box 838
San Raphael, CA 94902

The way I prevent hiss is to use a Metrotec $60 equalizer which allows you to record your instruments with a very high boost on the high end. It's the overcompensation principle at work — the same one used by DBX with its more expensive equipment. You don't always have to use expensive equipment to get good sound. Once you know enough not to break the equipment, there are no rules. You have to learn to trust your ears.

—Music Works

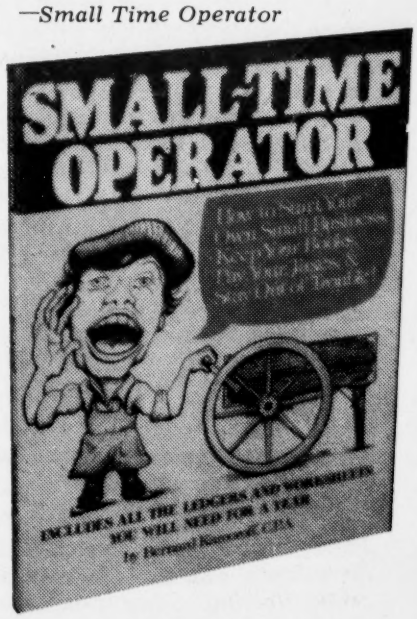
You can start out easily and simply. You don't have to make the Big Plunge, selling everything you own and going into debt. Start slowly, try it out, and learn as you go. You'll get there.

Things worked well for Joe. But if they had not — if he really did not have it in him to be in business for himself, or if he just picked the wrong thing at the wrong time — he could easily have stopped anywhere along the way with little or no loss. And maybe try it again some time.

•

If you're going to start a business, any business — the first and most important characteristic, I feel, is a clear head and the ability to organize your mind and your life. The "absent-minded professor" may be a genius, but he will never keep a business together. In running a small business, you are going to have to deal with many different people, keep schedules, meet deadlines, organize paperwork, pay bills, and the list goes on. It's all part of every business. So if balancing your checkbook is too much for you, or you just burned up your car engine because you forgot the oil, maybe you're not cut out for business. The work in a small business is rarely complicated, but it has to be done and done on time. Remember, this is going to be your business; it's all up to you.

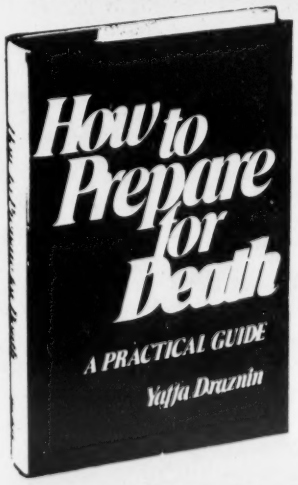
—Small Time Operator



Small-Time Operator
(How to Start Your Own Small Business, Keep Your Books, Pay Your Taxes, & Stay Out of Trouble)
Bernard Kamoroff
1976; 189 pp.
$5.95 postpaid
from:
Bell Springs Publishing Co.
P.O. Box 322
Laytonville, CA 95454
or Whole Earth

How to Prepare for Death

A guide to dealing with the legal and financial aspects of dying — wills, estate planning, probate, funeral services. Divided into two parts — Preparing for Your Own Death, and Coping with a Death in the Family. Unsentimental, last-minute, nuts-and-bolts advice on putting your affairs — or a loved one's — in order. For a more long-term preparation and planning, see **A Manual of Death Education and Simple Burial** *($1.50 postpaid from Celo Press, Burnsville, NC 28714, CATALOG, p. 223)*



— Tom Ferguson

How To Prepare For Death
(A Practical Guide)
Yaffa Draznin
1976; 228 pp.
$7.95 postpaid

from:
Hawthorne Books, Inc.
260 Madison Ave.
New York, NY 10016
or Whole Earth

When you die intestate (without a will) the probate court (or "surrogate court" or "orphans court" or whatever the name in your state) appoints an administrator to supervise the distribution of the property. The administrator appointed often is the closest inheriting next of kin (which may or may not be good for your estate, depending on how complicated its business affairs are and your relationship to that person).

. . . Then there's the way the state statute determines who inherits what. The rules are determined by marriage or blood relationship; and how the formula is applied is based on the number of relatives alive when you die, how close their relationship was to you, and whether or not you live in a community property state.

The formula is predetermined and rigid — and while the distribution may be just the way you would have apportioned your estate, the chances are that it won't be. The number of "typical" family situations upon which the intestate laws are based are very few in real life. And once you die, the impersonal process set into motion is unalterable.

Bequests to charity are given no recognition. Persons with whom you're very close, either taking care of you or living with you, get no part of your inheritance if they are not related by blood or law. Neither does your divorced spouse nor her or his children, nor any number of persons with whom you may have a special relationship.

Your business may have to be liquidated, your estate may be subject to federal and state taxes at the highest rate, and your heirs may have to wait an inordinate length of time until your assets are freed to pass to them.

You can see why now is the time to make out your will.

The cure for seasickness

These letters respond to a note in Winter 76/77 CQ *reporting on a NASA study which suggests that the best cure for jet-lag is orgasm.*

I used to fly across the country 4 times a year and was sometimes embarrassed to find myself having a wet dream my first night at the destination. Always felt great the next day. (Incidentally, I'm old enough now to wish it still happened.)

Also (during the same years) discovered that sex is not only the all time cure for sea sickness but that rough seas are great for sex.

Gotta go, my Alladin lamp is running dry.

Sincerely,

Jim Sullivan
Bodega, California

Gentlemen:

I feel somewhat qualified to comment on the idea of the orgasm being some kind of help for the effects of jet lag. Qualified because I have been an international-flying pilot for 13 years, somewhat because I have really not experimented what you would call a statistically significant amount since I was a straight arrow married man for much of that time. My observation is that jet lag is a very real phenomenon and that it is aggravated and alleviated by sleep, either loss of or sufficiency of. The usual problem after a long West-to-East (or East-to-West) flight (an interesting point in itself — North-South travel is not nearly as hard on the body) is an inability to take a nap when you arrive due to tenseness, excitement, over-tiredness, whatever. Therefore, a good orgasm, with or without partner followed by a 4- or 5-hour nap will do at least part of the trick. To the extent that the orgasm precipitates the sleep it is effective. Without the sleep, the relaxation alone probably helps. I intend to do more experimentation in this area.

Frank Needham
Ft. Lauderdale, Florida

RFD

A gay men's country journal. Like Country Women *it covers goat diaries, love poems and sexual politics: general encouragement for men trying to make it in the country.*

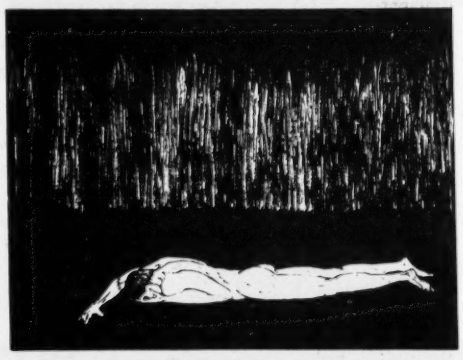
—Rosemary Menninger

MOTH-MARE

I dreamed I was a moth
At night, sucking light,
Banging powdered wings
Against your clear pane,
Demonic flash flutter,
I scatter living dust
On your soft sill, silt-covered
By hundreds before.

—Dave Sunseri

RFD
$4.00 /year
from:
RFD
4525 Lower Wolf Creek Road
Wolf Creek, OR 97497



Frond of coconuts

Dear Stewart Brand,

My wife and I have used coconut oil as a sex lubricant for many years, and every one of our children was born with two palms as a result.

Sincerely,

J.F. Mamjjasond
Cherry Hill, New Jersey

Blotting

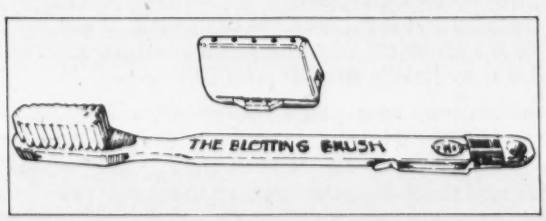
Better dental health through a superior new toothbrush (the Periodontal Health Brush) and a superior form of brushing called blotting. Since it requires no toothpaste or rinsing, you can do it anywhere (I blot while commuting). The brush is designed to travel easily in shirt pocket, purse, glove compartment. The secret of the technique is hollow bristles on the brush which get the placque-bearing juices out from between the teeth and gums. You sip the brush and move on to the next couple teeth.

There are two books. Acquiring and Maintaining Oral Health *is by the inventor of blotting, Joseph E. Phillips, D.D.S. His book is thorough, expensive, and full of terrifying color photos of unhealthy teeth and gums before blotting fixed them (along with fascinating details such as a way of defeating bad breath by brushing the back of your tongue and gagging, which empties the sour glands in the throat.) You can get the blotting brushes by mail from Dr. Phillips. The other book,* The Skin of My Teeth *is more introductory, esthetic, and cheap.*

—SB
[Suggested by Daniel Phillips, D.D.S.]

The Skin of My Teeth
(A Guide to the Blotting Method of Mouth Care)
James H. Shipley, D.D.S.
1976; 68 pp.

$6.75 postpaid
from:
Dr. James H. Shipley
6641 University Ave.
Middleton, WI 53562



Acquiring and Maintaining Oral Health
(Through the Blotting Procedure and Total Mouth Hygiene)
Joseph E. Phillips, D.D.S.
1972; 44 pp.
$10.00 postpaid

Periodontal Health Brush
$1.75 each, postpaid

both from:
P.H.B. Inc.
Box 144
Osseo, WI 54758

It is very important that the brush be kept as clean and dry as possible, for it takes a clean dry brush to give maximum capillary action to produce high absorbing efficiency. If running water is not readily available, one can employ an almost effortless method of cleaning or "vacuuming" the brush to keep it clean and dry. This is done by placing the bristles of the brush between the lips and drawing a sharp breath of air through the brush to remove the saliva and debris. Many people call the procedure "sipping."

Acquiring and Maintaining Oral Health

Marijuana As A Contraceptive *by Kay Weiss*

Because of their chemical composition, marijuana and estrogen, the female sex hormone, may have a similar effect on the body. Recently there have been reports of breast growth, lowered testosterone (male sex hormone) level and lowered sperm count in men who are heavy dope smokers. There have also been reports of irregular menstrual cycles and infertility in women marijuana smokers.

It is not definitely known that marijuana has the biological effects of estrogen, but it is known that its chemical structure allows it access to the centers in the brain and gonads that control reproduction. Whether this effect is greater from constant or intermittent use is not clear. Constant use may increase tolerance so that target cells adapt and no longer register its effects, or, conversely, persistent use may produce greater effects.

According to a few research studies, smoking marijuana on a daily basis can reduce the testosterone level in males. With heavy use — say, daily smoking for a month or several times a week for longer — testosterone level can be reduced by half, which puts it at pre-adolescent levels and effectively raises the amount of estrogen men normally have in their bodies. In one study, breast growth was noted in about 1 in 300 men who were heavy dope smokers. After these men cease smoking, the new breast tissue doesn't go away.

There have been a few reports that some women who smoke marijuana heavily have irregular menstrual cycles, don't ovulate as often or on schedule, and consequently have difficulty in getting pregnant. Experiments on laboratory animals indicate that when animals take THC (the active ingredient in marijuana) they have difficulty getting pregnant. Particularly if a woman smokes marijuana at certain times in her menstrual cycle — when progesterone, not estrogen, should be high — she might notice a delay in starting her period that month. Smoking good quality dope daily might raise the estrogen level in a woman's blood stream enough to mimic the effect of taking the oral contraceptive. Caution, though: suppression of ovulation requires a daily input of estrogen, and if you miss taking a pill or smoking a joint, you could wind up looking like a pumpkin eater.

Keep him barefoot and stoned

You keep hearing that what we need is a good male contraceptive. Some research suggests that the testosterone level is reduced by 5% for each marijuana cigarette smoked per day. Moderate smoking may temporarily reduce sperm count and decrease his chances of impregnating anybody. But to be a reliable contraceptive, sperm count must be reduced to zero level. Judging from experiments on animals and a few human observations, daily dope smoking for a prolonged period — a month or more — can reduce sperm production to zero level in some individuals. But dope may be a two-pronged contraceptive: some men become impotent before they become sterile.

Experiments with laboratory animals indicate that as sperm production approaches zero, a marked reduction in weight occurs in the presence of increased caloric intake. In laypeople's terms, stoned rats eat more but gain less.

All right, here's an opportunity for us to do research on ourselves. Drug companies, in their inability to differentiate women from guinea pigs, have been dosing us with every carcinogenic, toxic, painful contraceptive their gynecidal sadists (I mean scientists) can come up with. Our uteri, breasts and heads hurt from the IUD and the pill. Let's kick them right where it hurts (in the pocketbook), throw away our contraceptive pills and diet pills, fuck and eat all we want, and stay stoned. Grass could be the first therapeutic drug that works on the pleasure principle.

Make Love, Not War

Testosterone is the male sex hormone which studies on many species of animals have shown to be the hormone responsible for aggressive behavior. Marijuana reduces the testosterone level in men who are heavy smokers. (Statistics show that 50% of American men age 18-25 have used marijuana, yet dope never gets any credit for ending the Viet Nam war. . . .) It is not clear whether testosterone is lowered because of the estrogenic (female sex hormone) activity of marijuana or simply the general effects being stoned has on the central nervous system. After all, when you're laid back from smoking dope, you're not going to be generating high testosterone production. Hormone level is probably as much a reflection of behavior as it is a cause of it. Other experiments on toking monkeys showed that whether or not marijuana is involved, STRESS can reduce testosterone to pre-adolescent levels, and having sex can raise it again. Clearly, many variables besides marijuana must be studied before it will be known what factors control a complex mechanism like hormone production.

A sobering thought

Marijuana is carcinogenic, mutagenic and teratogenic, causing cancer, mutations, and defects in the fetus (most substances tested are at least two of those . . .). This has been shown in studies on laboratory animals, although the human evidence has not demonstrated it yet. In terms of lung cancer, marijuana is thought to be more cancer-causing than tobacco. Lung biopsies of soldiers who toked a lot revealed more and worse pre-cancerous lesions than you would see in tobaccoed lungs.

Pregnant animals who take THC have a higher incidence of miscarriages, stillbirths, and babies with congenital malformations than straight animals. This is consistent with findings of studies on human babies of women who take estrogen drugs while pregnant. For example, when the oral contraceptive is mistakenly taken during early pregnancy, congenital defects, and abnormalities in male and female genitals are seen in the offspring slightly more often. Don't smoke dope while you're pregnant. The normal formation of the fetus depends on a balanced uterine hormonal milieu.

Dope makes you dopey

Studies on animals suggest that marijuana has a cumulative effect in long-term users. It accumulates in the gonads and also in the brain. There is one report of memory impairment in long-term smokers. I forget where I read it. . . . ■

Mike Peyton
The New Scientist

Note to readers: Send us your experiences with grass so we can all benefit from the results of accumulated research. It may or may not prove to be a good contraceptive, but at the very least it can help those men who are trying to nurse babies grow the needed breast tissue. (See CoEvolution Quarterly Spring/Summer 1976).

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Science, Vol. 185. Aug. 23, 1974. p. 683.

The Lefthanded Bear

-more Animal Stories

BY J. D. SMITH

BIG AL'S BEAR STORY

(heard in the Lardo Saloon, McCall, Idaho, late summer 1974)

"Me and Churd and Hern were fishing the wind river up from the McMeeken place and I was carrying a mess of fish back to this big rock where we had the fire, and when I came around the rock I ran into a lefthanded bear standing on his back legs. He looked me in the eye, kinda woofed, took a step my way, and I threw the fish at him. He didn't take the bait, so I screamed and started running across to the only tree around that wasn't a peckerpole. I made a jump I didn't believe but just as I was pulling my ass up to the limb, he took a swipe at my ass with his left paw, and took a big chunk out of my right cheek. Buy me a beer and I'll show you the scars."

HOW TO GET AWAY FROM A BEAR

(heard in Burgdorf, Idaho, summer 1973)

"Me and my nephew are up here from Tucson looking for gold. We were walking into California Lake cause the road is still drifted shut in places, carrying our pans and lunch, and I noticed that there were pretty fresh bear tracks going our way across the drifts. So we slowed down a little. After a while we took the cutoff down to the lake, which isn't nothing but a peat bog and when we finished lunch and were walking back out, there were fresh tracks ahead of us again. My nephew said that he'd always heard that you could get away from a bear by running downhill, cause somehow a bear is built to go uphill but not down. Could be something to it. I remember this oldtimer telling me that if a miner met a bear in the snow he ought to stand in his pan and start sliding downhill, and the bear won't follow."

LITTLE KNOWN SUPPOSITION

Seagulls drink sea water.

ANOTHER ONE

Pigeons take care of their elders.

ANIMAL STORIES is becoming a genre at CQ. *Send us your best. We pay $10 on publication.*

—SB

MOUSE STASH ONE

I was a janitorial understudy in a big church office building, when one of the old hand secretaries from the fourth floor showed up on the first floor with nervous perspiration and tales of mice in her desk. By the time I got back to her office with her, rodentophobia had filled the rooms of her fellow workers. Her desk had nice piles of paper on top, but underneath, where the typewriter supposedly goes when it swings away, was a little television set with an earphone, a few crumby tinfoil lunch wrappers, and an eight-day-old nibbling mouse. She had been watching soap operas when the mouse appeared, right there beside the drama.

Enter Caesar, the real janitor, carrying a mechanic's red rag as a mousetrap. The mouse ran up into the innards of the desk, and Caesar started tapping different places on the metal sides with the butt of his screwdriver, but the mouse had somewhere to hide and noise didn't bother it. It wouldn't come out to be slaughtered, so at Caesar's noisiest moment, I took the rag, wadded it up in my palms, caught Caesar's eye, and started walking slowly through the four grandmother secretaries.

It worked, the mock murder did. They thanked us plenty, and we cracked up in the elevator. About two hours later, I was called back to the fourth floor when one of the ladies nailed the second mouse with the lip of an upside-down metal wastebasket. I carried it away in paper towels and tossed it in the dumpster.

MOUSE STASH TWO

I developed a pack rat roommate while I was sleeping light and alone in a mountain cabin in the dark of winter. He was nocturnal, and would pat his tail when happy or eating. It sounded like a little girl knocking at the door, and would wake me up, and I'd yell at the little fucker to quit reminding me of my daughter. He'd quit patting his tail and I'd go back to sleep. He'd crawl in at dawn and I'd do the day shift in the snow in the hot springs.

Eventually, he stole my braided silver neck chain, which I had carried all the way from Cambridge, but which I took off when I was trying to sleep. I began the search for his nest in my home, but I had so much clutter to my personal relation with the material objects around me that he could have been almost anywhere.

I waited up with a gun and a flashlight, saw where he ran when I hassled him, and blew him away with a twenty-two in the back of the head, about a foot behind where I lay my head when I slept. For murder I got a bunch of buttons, tinfoil corners, a roach clip, and my braided silver neck chain, which, at this writing, is lost again. ■

Spring & i move the cat to another chair

She yawns &
looks at me

I yawn back at her

She licks her paw &
then looks at me

I lick my hand &
look back at her

She licks her ass &
looks across at me

I acknowledge defeat &
go to the kitchen
for another bottle of bock

—Fred Schowalter

Wellness Inventory

The annual physical isn't of much use in helping you stay healthy, with the exception of a few specific tests — blood pressure check, TB screening, breast exam and pap smear for women over 25, glaucoma testing if it runs in your family, and sigmoidoscopy after age 50. This hundred-item, self-scoring questionnaire focuses in on things that can make a difference — smoking, alcohol, fat, auto safety, inactivity, apathy, family difficulties, stress, difficulty expressing feelings. Helps you determine areas of your life that might benefit from some attention.

—Tom Ferguson

Wellness Inventory
John Travis, M.D.
$ .50 plus stamped, self-addressed envelope

from:
Barbara McNeill/Wellness Inventory
Wellness Resource Center
42 Miller Avenue
Mill Valley, CA 94941

NUTRITIONAL AWARENESS

- ☐ I eat at least one uncooked fruit or vegetable each day.
- ☐ I have fewer than three alcoholic drinks (including beer) per week.
- ☐ I rarely take medications, including prescription drugs.
- ☐ I drink fewer than five soft drinks per week.
- ☐ I avoid eating refined foods or foods with sugar added.
- ☐ I add little salt to my food.
- ☐ I read the labels for the ingredients of the foods I buy.
- ☐ I add unprocessed bran to my diet to provide roughage.
- ☐ I drink fewer than three cups of coffee or tea (with the exception of herbal teas) a day.
- ☐ I have a good appetite and maintain a weight within 15% of my ideal weight.

Dog flesh

October 12, 1976

Dr. Robert Klein
Human Development Division
Institute of Nutrition of
Central America and Panama
Guatemala City, Guatemala

Dear Dr. Klein:

Your name has been given to me by Paul E. Johnson, Executive Secretary of the Food and Nutrition Board, as an expert in the area of human nutrition who might offer my colleague and I some information concerning a research project. We are studying the potential use of dog flesh as an additional source of food for household pets. We have conducted an extensive search of the literature, but have been unable to find the nutritional value of dog flesh.

Because of your expertise in the field of food and nutrition, we would welcome any knowledge you have on the nutritional value of dogs. Also any other comments you have on this subject will be appreciated.

Enclosed is a very brief questionnaire on which you may make your comments. We would appreciate very much if you would complete and return it as soon as you can in the postage-paid envelope.

Sincerely,

Dr. James U. McNeal
Professor of Marketing
College of Business Ad.
Texas A & M University

December 16, 1976

Dear Dr. McNeal:

I am taking the liberty of writing you personally, rather than filling in your questionnaire, because I regard your project as one of the most remarkable that I have seen in some time. I must say that here in Guatemala, most of our dogs are so starved as to be not worth the trouble it would take to hunt them down. The rest, which are quite meaty, are the watch dogs of the rich and are so large and vicious that one wonders what it is that they eat. In short, here in Mesoamerica we have, in recent times, had little direct experience with, as it were, dog food.

Nevertheless, your project is a fascinating one. Before responding, however, to your questionnaire, I wonder if you would be so kind as to tell me what security provisions you have made for the protection of your consultants when the paid spies of the SPCA find out what you're up to. Also, do you contemplate life insurance (my wife would like to know). Finally, have you considered a consultant from New York — a dog-eat-dog world they say.

Sincerely,

Robert E. Klein

P.S. Are you by any chance related to the Don McNeal who used to host the radio program "The breakfast club"? It was always one of my aunt's favorite programs.

P.P.S. A friend of a friend is considering raising dogs for fur, and he has been bitching about what to do with the meat. Should I put him in contact with you?

Helpful Hints for Quitting Smoking

ASH is the Washington anti-smoking lobby. On request, they'll send you a big envelope full of pamphlets with full-color photos of what smoking does to your heart and lungs, reprints documenting the ill-effects of tobacco smoke on non-smokers, etc.

Anybody out there have any good tips for quitting? (Or reasons for not quitting?)

—Tom Ferguson

R. Crumb

Helpful Hints for Quitting Smoking
(and other information)
Free
from:
Action on Smoking and Health (ASH)
P.O. Box 19556
Washington, D.C. 20006

The Acorn People

PART 2

BY RON JONES

Illustrations by Tom Parker

Herewith the conclusion of **CQ***'s first two-part serial, a true story of disabled children at a California summer camp in 1960. The teller is Ron Jones, who was their counselor.*

In the first installment we went through the initial shock and disgust, then acceptance, then growing affection for the children in Ron's cabin – Benny B. (Black, legless, speedy); Spider (no limbs at all, a talker); Thomas Stewart (tiny body slowly ungluing from muscular sclerosis, sullen); Martin (blind, otherwise able); Aaron Gerwalski (called Arid for the constant smell from the bag he has to carry in place of a bladder). All the kids are mid-teenagers. A nurse has explained to Ron and his co-counselor Dominic Cavelli, "Most won't live past their teen years."

Grace comes to this pathetic lot through a nutty symbol – acorn necklaces they start making for each other on their first day at crafts. It defines them: The Acorn People. Soon acorn necklaces become a kind of currency with the other campers as they venture further into contact through courage in the swimming pool, campfire songs, beginning flirtations with the girls.

Camp Wiggin has a totally insensitive and mostly absent administrator, Mr. Bradshaw. Partially in flight from his over-rigorous scheduling Ron's kids make an expedition up Look Out Mountain. With their four wheelchairs it is an heroic ascent to the final steep pitch, where they have to crawl and haul each other to the top. "There were seven of us lying faces to the sky, just watching." Spider gently gives the mountain one of his acorn necklaces.

The descent is rapid and triumphant. "We arrived late to the dining hall. In dusty halos we tramped and rolled in. I guess all explorers expect a ticker tape parade of some kind. Surely the world knew of our exploits. But the dining room was unexplainably quiet. . . ."

So ended Part 1.

–SB

It didn't take long to find out what had happened. The camp director, Mr. Bradshaw, had been "alarmed at the randomness of camp activities" and "concerned that parents visiting the camp on the following day would not find camp as it should be." To prepare the camp for Parent Visitation Day he announced strict adherence to the camp schedule. He had finished his remarks with . . . "we don't want to demonstrate unruly behavior at camp in front of our parents, now do we?"

We all knew what unruly behavior meant. Dominic had started teaching boys and girls the skills of cooking. He made up delicious meals. In fact he was famous for his chopped hamburger, apple, cheese and onion delight. It was a mixture of these ingredients rolled into a ball and covered with aluminum foil for cooking in an open fire. It was delicious but rather unruly. Especially since most of the food was swiped from the camp kitchen. Dominic began holding a late afternoon "eating club" attended regularly by forty or fifty kids. Aaron became assistant chef and apprentice. Most of these kids had never held a knife, let alone sliced a carrot. Dominic was a master at closing his eyes and trusting that determination could beat any palsy or lack of sight. He was right. Seeing Dominic and his success with kids prompted other forms of unruly behavior.

Several women counselors got interested in archery. They went to town and bought a set of inexpensive bows and arrows. It wasn't the safest place to be around when they held their practice but it was a thrill to watch children struggle to use their chairs and bodies as the means to hold the bow and draw an arrow. It was pure joy to watch arrows take flight following moments of intensive effort and patience. Another incident of unruly conduct came from Lenny X. Lenny was a black African. He was mean looking. His face scarred and twisted. You wouldn't dare meet him if it were not for his songs. Wherever he went he would be humming or whistling. You couldn't help but join in. Pretty soon you'd be humming the same song, catch Lenny's eye and smile. One day Lenny X sat down in a shady place and just started singing. It was just after lunch when he started. He sat in that one place and sang until the late afternoon. By the time he finished, every child and counselor had learned Lenny's songs. It was such a relief from the Boy Scout anthems and bugle calls that pounced from the camp loudspeaker. Lenny taught songs that once started could go on forever. Evenings at camp were blessed by these sounds. One cabin would start and others would softly join in until everyone was singing. These were the most tranquil hours I have ever experienced. Lenny considered songs a greeting. He explained to the children that in America you greet someone with "how are you," whereas in Europe the greeting is "good day," and in China it's "have you eaten?" The greetings of Senegal and Gambia Lenny explained are like their songs – they ask "do you have peace?" His songs were like this greeting. They were expressions of peace.

The most unruly act of the camp was perpetrated by the camp nurse, Mrs. Nelson. She was an older matronly looking woman who probably served as a nurse in World War II. She always wore the same dark blue dress with matching socks rolled under at the ankles. The aging process had not been kind to Mrs. Nelson. Although she walked with a quick gait that bespoke of a once spry woman, she was now quite heavy. Her face was always over made-up with bright red lipstick and swooping eye brows. Well, it was just this sight that caught some of the girls' attention. They started asking to see how she did it. I guess this might have been the first time in a long while that anyone noticed this labored beauty. She responded by giving impromptu lessons in makeup for the girls. For most, this must have been their first taste of rouge. All of a sudden half the girls had bright red lipstick. The next day they smelled like a field of lilacs or showed up all wearing face cream. Of course they thought they were beautiful. Mr. Bradshaw saw them as unruly.

The prospect of ending Dominic's Eating Club, the straight arrow archery team, Lenny's songfest or Mrs. Nelson's beauty salon was out of the question. The children were learning, growing, and most of all they were happy. I gauged my own change in these days by realizing what a benefit it was to be in this Boy Scout Camp. I walked around thanking stairs, bunk beds, and hills, because they made all of us behave a little more normal. The camp was not a "place" for handicapped children and the kids knew it. Camp Wiggin was a summer camp for children that shoot arrows, cook goulash, take hikes and sing songs. It wasn't a place for ramps, sanitized medical facilities, swimming pool rails, or activity schedules. It was a place for children and their expectations and fantasies for life.

DAY 7

The next morning was filled with orders. Each cabin had an assigned location. We were to display for the parents "what it is we do at camp." There was no protest or shouts of outrage. There were parents on the way. And you know. It's just easier to follow directions. Our assignment was the craft area. Out came the head dress and book ends. According to Mr. Bradshaw, we were to make name tags for all the parents, children and exhibit areas. Aaron, Thomas, Benny and I started making name tags. Using up a box of index cards we completed name plates for every child in camp. Dominic, Spider and Martin went around delivering the tags. There were six boxes of blank cards still unused and plenty of time. Aaron was the first to see this and start to work. He wrote a label for the Indian Headdress. He carefully printed "Indian Headdress" and placed the card next to the artifact. Then he started on "Book End." Benny, Thomas, and I caught on. Each started marking tags for trees, wheel chairs, drinking fountain, pool, nurse station, leaf, rock, cabin door, toilet door, table, handicapped child. Dominic and his messengers started

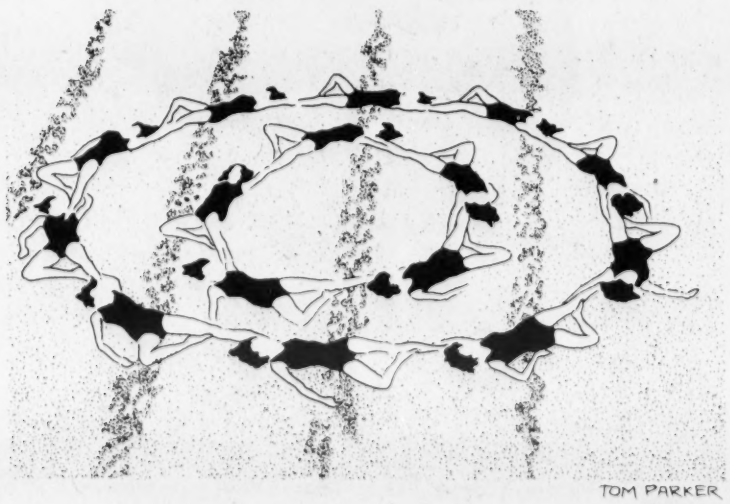
Ron Jones at Camp Wiggin that summer.

acting like Santa Claus delivering the tags. Placing them on everything. Within an hour every moving and stationary item had a label. Some had two. The camp looked like it was hit by a bumper sticker blizzard. In the middle of the paper storm the parents started to arrive. Aaron wrote as fast as he could. He had a label for each car. And for the riders in each car a label identifying the bearer as "parent" or "friend of parent."

Oh my God. Our triumph was a tragedy. For a moment we made the signs. We were in control. But once those signs were in use, we were victims of our own action. The sign making represented rebellion. The sign placement marked the end of rebellion. All of a sudden everyone and everything had a label. We had done it to ourselves. In one quick gesture we were tied to our own label. We were identified and separated from each other and the things of life that surrounded us. The universe was calibrated. Placement was set. There would be no surprise, no illusion, no life.

Mr. Bradshaw was delighted by this flurry of activity. Everyone was busy. Everyone had a tag. The camp was a model of efficiency and order. That evening he presented the parents and campers with a treat. Following dinner we were invited to watch a film. As the light struck against the dining room wall I couldn't believe what Mr. Bradshaw called a treat. The film dealt with water safety. There were extensive scenes about mouth to mouth resuscitation and how to throw a drowning swimmer a life ring. Behind the scene was the sight of children cavorting in the water. White teeth glistening. Children running and jumping into the water. I hated these blond-headed kids and their smugness. The film ended with a Red Cross demonstration of water ballet. Graceful legs posing above the water then darting beneath its surface. Children kicking in unison toward the center of the pool to form symmetrical stars and flowers with their arms and legs. The film ended without applause.

That evening, camp was quiet. There was no singing. Dominic didn't tell any Mafia epics. And those labels, they were like a hundred spying eyes. They were everywhere. Reminders of who we were and what our place in the order of things was. Late into the night I was awakened by a crash of ash cans and an erratic flashlight that shot right into my eyes. In a stupor I climbed out of bed and headed toward the noise. I thought one of the kids had gotten tangled up trying to go to the bathroom. The noise of crashing and thrashing about increased as I got closer. It was Mrs. Nelson; she was laying on the ground with this big smile and one upraised eye. Her flashlight swinging wildly. She was totally inebriated. No, she was blind drunk. In her hand she had a dozen or so labels. She threw her head back and in a slur of perfection declared, "See here, I've got them . . . all of them." Well, not quite, I thought, but you've got the idea. I picked her up and we weaved together through the camp toward her cabin. Along the way she would sway to rip off a label here and a label there. I started helping her in this purge. She smiled and giggled at the sight of help. Together we did the deed.



DAY 8

Next morning everyone asked who had removed the labels. Even Mr. Bradshaw was missing. He was off on another fund raising junket. There was speculation that the good camp fairy had made the visit. Spider was convinced it was the green hornet. Aaron voted for Mr. Clean. Martin speculated that bears did it. The questioning and hypothesis about our benefactor raged over breakfast cereal, fruit, and rolls. It's funny how heroes must always be bigger than life.

Like the surprise and wonderment of finding the sky, revolution can't be planned. It happens when you least expect. Its clerics are not bigger than life but humble and simple souls. Like the person next to you. Revolution is a Rosa Parks who decides one day not to ride in the back of the bus. Or a navy nurse named Mrs. Nelson who suddenly refuses to let her children be condemned to a label.

Throughout the hubbub Mrs. Nelson sat in a corner holding her head and nursing a cup of coffee. As curiosity crescendoed I informed these seekers of the truth that, "I know who did it!" It was a pleasure to know that although I couldn't act like a rebel I at least could identify one if the chance presented itself. The time was now. I pointed deliberately to the corner of the room. Everyone looked and then looked back. "So who did it?" Spider inquired. I pointed again. "Not Mrs. Nelson," chided Benny. "Yes, Mrs. Nelson," I replied.

Well Mrs. Nelson was a genuine camp hero. It couldn't have happened to a nicer person. I'm not at all sure she remembered her gallantry but her legend spread unabated. From that moment she couldn't keep the kids away from her. You might say she was captured by good intentions. Kids would huddle around her proposing things to do. It was as if she possessed some kind of magic. Well maybe she did. After all, she stripped those labels

off all of us. She gave us back the chance to be children. To dream and play.

DAY 10

Play we did. Some of the girls organized a dance. It was crazy. Beautiful. We all dressed up. The boys perfumed themselves with Wildroot and Dixie Peach. Martin got his rangy red hair into a duck tail. Benny and Thomas settled for the natural look. Spider had his hair slicked into a Rudy Vallee shine. Aaron had a crew cut that with the aid of vaseline stood straight up. All three inches of it. The girls wore pony tails and lots of ribbons. For music we had Mrs. Nelson's slow records. Can you believe Frank Sinatra. For those into the "twist" we had the Chantells or some such group. We also had some down home country music and one record of the bunny hop. The dance started like every dance. Boys on one side of the dining hall, girls facing them. Three records played and no one moved. Janie, one of the girl counselors, took the hand of some of the blind girls and made a line. She started describing out loud what she was doing. There was a great squeal of "oh no's." Janie walked over to the record machine and put on her favorite country song. Back she sashayed to the waiting lines of girls, broke into the middle of the line and shouted, "Here we go! Four steps forward. Four steps back. Turn around and slap your back." She was giving a spontaneous square dance call. I grabbed Martin and some kids in chairs and we followed Janie's call. We moved forward. We moved back. Formed a circle. Circled right. Turned around and said goodnight. Pretty soon the whole hall of kids and counselors was moving to Janie's call. Not all together mind you. But moving. We were the dancingest moving fools you ever saw.

Once you start it's hard to stop. Janie called a Virginia Reel. She had the boys line up across from the girls, then peel off in couples and parade, wiggle or wheel down the corridor of clapping, shouting kids. There was a commotion of jockeying to "line up" with the right partner. With our kids the chance to dance with a girl brought a mixed and surprising reaction. Benny B. would have nothing to do with this nonsense. He sped about the hall showing off to a diminishing audience. Martin had the dilemma of three girl friends. They were his diving friends at the pool. He asked if he could "cut in" on the line so that he would have the chance to, as he put it, "share himself with the ladies." I promised to help him. Aaron of course had to dance with Mary. Thomas wanted to watch. Spider was courting his favorite girl counselor.

I don't think you could call what we did a classic Virginia Reel. What took place reminded me of kids on "Bandstand" doing that jive stroll as others stood applauding and moving up the line for their turn. For our kids the slightest turn of the shoulder or turn of the wheel chair was rewarded. Every dancer had his own style. They slipped, slid and just had fun. By the end of the dance the kids and counselors were making up their own rules. Groups of four or five children and counselors would grab hands and come down the center of clapping contestants. Martin was last down. He had the biggest grin on his face I've ever seen. He also had three young ladies.

If the "stroll" was for the big kids, the bunny hop was for the kid in all of us. Everyone could do it. This was Benny's favorite. We formed a big conga line of wheel chairs and weaving bodies. With a hop hop hop or its equivalent the Bunny Hop began. Closing your eyes and listening to the screams of delight and exhilaration you might imagine yourself in the center of an amusement park in the heart of the old fun house at the beach in San Francisco.

Finally the big moment of the dance arrived. Janie asked for quiet. Then with the gathering at attention she announced the crowning of the Camp Wiggin King and Queen. I knew it. I knew those girls would romanticize this occasion. No proper dance is proper without such goo. Benny and I were allies on this. Benny complained, "Oh heavens no." I agreed. Spider in typical good humor suggested in undertone, "Mr. Bradshaw for king." Like most King and Queen things I knew it was fixed. I knew who would reign.

I was wrong again. Mrs. Nelson was a perfect Queen. She preened and threw kisses to everyone. So who would be King? There was the traditional murmur and rustle, "The girl counselors, after consulting with girl campers, and the camp cook, proudly and with great honor proclaim the next King of Camp Wiggin to be . . . Aaron Gerwalski." "Who?" "Aaron Gerwalski." "That's Arid." "It's our Aaron." Even Benny was excited. "Our man Aaron did it, he made it," he said. "Yea, and he gets to kiss all the girls," added Spider. Aaron was a perfect choice. In grand style we wheeled him to his waiting throne and his Queen. She picked him up and gave him a big kiss. Bright red lipstick right on the forehead. Aaron was speechless, embarrassed and thrilled all at once. Buffeted by all this attention. Searching for a reason for this adulation, he turned to the assembly and before he could speak answers began to break their way towards him. "It's your hair, it can hold a crown by sticking to it." "Aaron you're the best cook in camp." "Aaron you're just neat." That last

comment caught Aaron's need. He turned and smiled at the direction of the comment. His expression ignited the crowd into three cheers. Three cheers for the King and Queen of Camp Wiggin.

It's not easy being a king one moment and a child the next. Wheeling Aaron back to our cabin I couldn't see his face for the evening shadows. I could feel his body in the chair. He had his hands cupped over his face. He bent forward in his chair. Body shaking and quivering. Taking in quick gulps of air. Then pushing the air out in repeated sobs. Tears were streaming down his face as he turned in embarrassment from other campers. "I've never been given anything like this," he cried. "I've never been a king before." Still pushing him slowly I responded, "Most of us will never be kings." Aaron continued, "But I'm so happy, why am I crying?" Before I could think of an answer he had another question. "Do kings cry?" I had an answer, "Yes."

That night camp filled with the shepherd chorus of Cum-Ba-Ya. One cabin would start singing. Others would join in and then silently hold their voices and just listen to the others singing. We were at peace with the world. I thought I could hear each voice in the camp somehow held suspended by all the voices. And the soft singing of Benny and Spider. And what a marvel – Thomas singing faintly for the first time.

"Somebody's singing my Lord
Cum Ba Ya
Somebody's praying my Lord
Cum Ba Ya
Somebody's singing my Lord
Cum Ba Ya
Oh Lord
Come By Here."

Why can't life be like this. Human beings in all their magnificence. Working to find that moment of pride. That one second of excellence at being alive. Hearing our singular voice held in harmony by the voices of those we love. The feeling of belonging not just to oneself but the entire universe.

Camp days fled by like a tide leaving the sand. Each day seemed shorter. There were signs of anxiety. "How many days left?" was a constant question. The kids seemed to withdraw gradually but perceptibly into cocoons. I noticed Thomas stopped talking and was slumping in his chair. Benny B. was racing about in a frantic way. He told me that if he stopped the camp would end. The closing date was looming bigger and bigger. Mr. Bradshaw returned to camp to remind us that parents would arrive to be with us all day the upcoming Saturday. And final camp activities would end Saturday afternoon. He wanted the camp clean. So that was our fate. To spend the last three days of camp cleaning and waiting. I was asked to clean the pool. The place that I and everyone enjoyed the most was to sit unused.

Mrs. Nelson felt the brunt of this depression. Most of the girls returned their make-up and many children displayed symptoms of illness that marked their first few days at camp. Bed wetting returned. Those kids on special diets that had been eating regular meals or Dominic's concoctions requested their pills and pampered attention. Mr. Bradshaw provided the final blow to morale when he asked (told) us that he planned another water film for showing on Saturday. There was no response to this suggestion. In desperation I asked if we could at least keep the pool open until Saturday so that we could demonstrate how many of the kids had learned how to swim. "Mr. Jones," he said looking right at me, "the pool is your responsibility. Just be sure it's clean by the closing of the camp on Saturday." There was still no reaction from the kids. Mr. Bradshaw left the room and the camp. In leaving he thanked and complimented us for being good campers and counselors. He was proud to be a part of Camp Wiggin. And knew the parents would be pleased on Saturday. No one moved.

3 DAYS TO GO

We just sat in silence for what seemed like an hour. Finally Mrs. Nelson started walking around the room. Hands behind her back like a priest on a morning walk. We all watched her circle quietly and then come to a sudden stop. "Why don't we," she said. "Why don't we put on our own water ballet? Put on an extravaganza. With costumes. And a story. Everyone can take part. We'll put on a show for the parents. Well what about it? Do we sit on our duffs feeling sorry for ourselves or do something. I'll get reporters and they can film us . . ."

That did it. That was the trigger. Film. Reporters. These kids had never been news. Most had been family secrets. They had been observers. Now the chance to be performers. "Can we do it?" someone asked, and before anyone could answer there was a resounding "We can."

2 DAYS TO GO

We had two days to prepare for the Camp Wiggin Water Extravaganza. Mrs. Nelson came to the pool for the first time. She had on an old wrinkled bathing suit and white skin that piled about her. She was a brave lady. I don't honestly think she could swim. Armed with ignorance, a drill sergeant voice, and lots of courage she started directing what she called The Acorn Pirate. She had in her hands several pieces of paper that looked like a diagram for building the great pyramid.

With Mrs. Nelson's directions, materials from the craft center, and lots of work, the pool was trans-

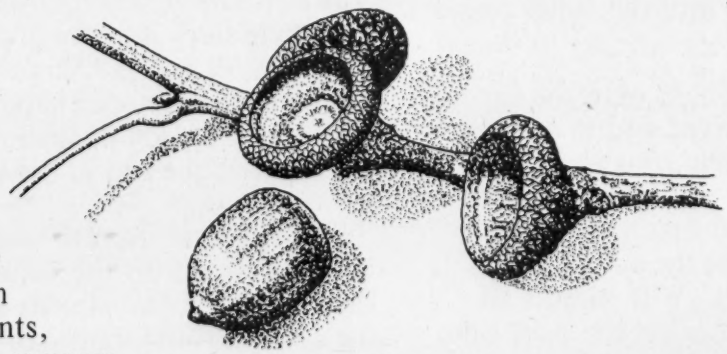
formed into a lagoon complete with pirate ship, palm tree, and exotic plants. And oh yes, one native idol. The changing rooms at the end of the pool were painted to look like the side of a ship. Portholes replaced windows. The flagpole with its speaker became the mast of the ship U.S.S. Acorn. Probably the first pirate ship commissioned into the navy by an ex-navy nurse. A sail was fashioned out of sheets, and jolly roger pennant was fitted out slightly below Old Glory. Next came the costumes. The inner tubes were made into floating islands of flowers. Safety belts became ballet skirts, pirate belts, and native war dress. South Pacific, look out.

1 DAY LEFT

With one day left we had our set. It looked beautiful – this rogue pirate ship setting in the middle of Camp Wiggin. Now for the performance. Mrs. Nelson called everyone together. She divided us into pirates and natives. Good guys and bad. As for the script itself, well, that seemed still to be a mystery. Once into our roles we were given various options. We could be divers. Or racers. Or dancers. We practiced our separate parts. The divers sinking to the bottom of the pool, on cue, of course. The racers pushing their inner tubes across the pool in intricate patterns. The dancers practicing a kind of Tai-Chi on the pool deck.

0 DAYS LEFT

Saturday was the big day. The Camp Wiggin Water Extravaganza was about to begin. Everyone went right to the pool to hear Mrs. Nelson's final instructions and get into their costumes. Mrs. Nelson began talking, "Now, children, I'll read the story over the camp loudspeaker. All you have to do is listen carefully and follow my instructions." As if on cue, cars loaded with parents, brothers and sisters of the campers started arriving. They parked and were immediately greeted by a welcome committee which plied them with flower leis and invited them to the pool area for a play to be performed by the campers and staff. Janie and some of the girl counselors had ridden into Santa Cruz the evening before and to everyone's enjoyment returned with boxes of Antonelli Brother Begonias. They worked all evening making leis. The surplus flowers covered the pool in bright exotic colors.



Parents conditioned to strained greetings were delighted. Family children accustomed to pampering or resenting their handicapped brother or sister found themselves wishing to be in the play. You could see smiles flash across the faces of the hosts.

Pirates and natives waving to their bemused families. The excited and curious audience was directed to take seats around the pool. Mr. Bradshaw was late arriving. Along with his delegation of trustees, he faced a play about to begin. There was only one thing to do. Join in like everyone else. Well, at least the pool was clean. It even had flowers.

Mrs. Nelson approached the microphone. Papers in hand, she started to narrate and direct our water epic. "Once upon a time, an ugly pirate, that's you Mrs. Jones, sailed his ship the U.S.S. Acorn in Camp Wiggin Lagoon. The pirates with Mr. Jones were a villainous lot. Well, look mean you pirates. That's right. Stomp around. Show off your eye patches and swords. Shake your fists at the natives. Good."

"The peaceful natives of the lagoon were a powerful and beautiful people. They simply chided (that's make faces) and taunted the pirates."

"The pirates, angered at this show of disrespect, pointed to their skull and cross-bone flag. Finally, the captain of the pirates stepped out on the gang plank. That's the diving board Mr. Jones. (No one said pirates were smart.) The captain of the pirates, a ferocious braggart, declared that he came for the treasure in the lagoon and that nothing would stop him. To get the treasure he challenged the natives to a contest. It would be his pirates versus the natives. May the best group win."

Given this order to act, I pranced about looking all the natives straight in the eye. Then I walked about displaying the muscles and strength of my fellow pirates. In silent movie fashion I was overly dramatic. I know because the audience started booing me. Imagine me, the most virile of pirates being booed. Most of the kids got the idea and started posturing and posing. Spider and Martin played natives. When I passed each of them I lifted my eye patch and gave a pirate wink. They laughed and in retribution shook their acorn necklaces in my face. Taunting and teasing I tried to encounter each of the pirates and natives. I paused by each player making some kind of gesture or salute. Giving everyone a chance to receive some applause and recognition. The audience was fantastic. They got the idea and warmly greeted each of the players. The stage was set.

"All right Mr. Jones, that's enough," called Mrs. Nelson. "The story must go on. And so the pirates challenged the natives to a contest of strength and

TOM PARKER

wisdom. The first event of the contest was the dive for treasures."

With this introduction, Mrs. Nelson pulled a box from the girl's dressing room and with a heave dumped the contents into the pool. It was the camp silverware. Every last knife, fork and spoon. Returning to the microphone Mrs. Nelson calmly continued her narrative chatter.

"Pirate and Native divers went into the water to collect the treasure."

The divers entered the pool. There were the sinkers like Martin who silently submerged and in a sitting posture on the bottom used their arms and legs to scoop up the booty. And there were the divers. Those kids that went down head first tracking down a single piece of silver. Of course the audience awarded each find with hurrahs. With almost all of the treasure collected and piled on the pool side, Mrs. Nelson continued her story.

"The treasure was taken to the native temple of Oh La where it could receive the blessing of the God Oh La. OK you pirates and native dancers, you heard me. The treasure was taken to the temple. That's it. Good. Now the only way the God Oh La would release the treasure was with the satisfactory performance of the legendary water ballet."

Given this signal the pirate and native players that had practiced roving about the pool were placed in their respective inner tubes. From the various edges of the pool they kicked and splashed into the center of the pool where they formed a large circle. Then with the orchestration of Mrs. Nelson the circle was pushed in a clockwise and then counter-clockwise maneuver. The audience clapped in appreciation. It was hard. Kids like Benny wanted to go fast, while kids like Aaron and Thomas were doing all they could just to keep afloat. Each had to show a great deal of toleration.

The circle move was followed by the formulation of a floating star. And the division of floaters into two lines. It was the Virginia Reel on water. The God Oh La must have been happy. As the water ballet ended Mrs. Nelson proclaimed that a final contest would mark the end of the water extravaganza.

"With approval from the God Oh La the treasure was to be given to the winner of a race between the Captain of the pirates, that's Mr. Jones, and the best native swimmer of all time – Spider, The Unconquerable."

It was obvious from the corresponding boos and adulation that Spider was the odds-on favorite. To build up for the big race, some of the pirates and I did evil looking dives. The natives countered with their own dives. (Actually we had several kids who thought big splashes was the only appropriate act for such a play.) With the completion of the dives, the race was about to begin. Mrs. Nelson began explaining how the contest would be fought.

"According to ancient tradition Spider would be allowed to start first. This swimming start is to

offset the fact that the Captain of the pirates is known to cheat and use the gang plank as a diving board. Are you ready? Will someone help Spider get ready. All right. On your mark, get set, go!"

In the midst of a great roar Spider was off. Surging and kicking with all his might. I watched carefully trying to calculate when I should dive. I knew that a running dive even done with lots of wasted motion could carry me a fourth of the distance across the pool. I also knew that to Spider this was a race and it wouldn't be right not to go all out. With this in mind I gave a pirate yell and dove headlong after Spider. I came up and spotted Spider perhaps half way down the pool. With exaggerated but sure strokes I quickly began to close the distance. I could hear the crowd yelling frantically for Spider. "Faster," "Faster," "Come on Spider!"

Just a little past halfway I drew abreast of Spider. I hesitated trying to think what to do. To roll over and back stroke. To dive under water perhaps and swim the distance out of public sight. I was now a clear body length in front of Spider.

I heard a yell. I looked over at Spider. With a jerk he was out of the water. In fact he looked like a rock skipping over the water's surface. He was alongside of me and then past me. Faster and then faster. I started swimming with all my might. Mrs. Nelson had done it! Spider was being pulled across the pool by a rope. She must have tied the rope around Spider while I was doing those dives. I hadn't noticed. It was a complete surprise. I was probably the only one blind enough by my own role not to have sensed the preparation. Now it was too late. Half the camp and a few parents were tugging the rope up the hill. Spider was being reeled across the water at incredible speed. With all my might I splashed toward the pool's end, not so much to win the race, but simply to prevent Spider from being pulled through the pool wall. My frantic attempt to catch Spider caused people to pull him even faster. Everyone was yelling. In desperation I lunged across the pool in an attempt to catch hold of Spider's body. I missed. He was past my reach. Just as Spider was about to be yanked through the pool side, Mrs. Nelson gave a command, the pull rope was dropped and went slack. Spider coasted the final few feet like a surfer on a wave. Mrs. Nelson picked him out of the water. Spider had won. We had all won.

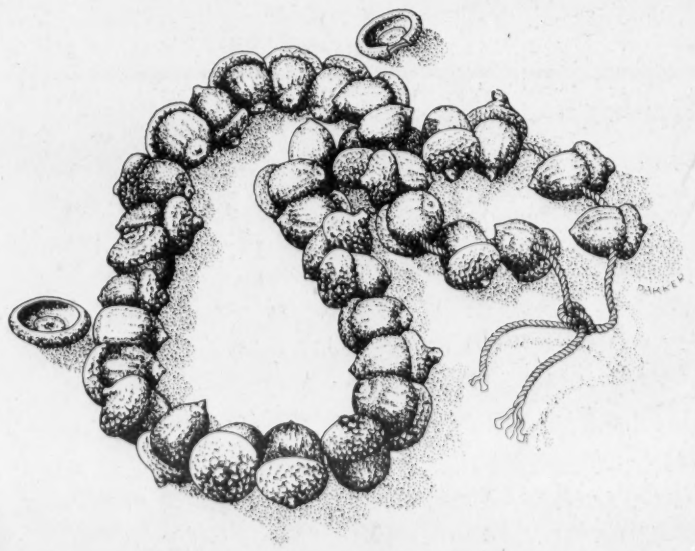
The race, the summer camp, the companionship was ended. Quiet moments of goodbye. I was reminded of our first meeting. A silent exchange. Now it was taking place again. Children, the precious bond of life, were being passed from counselor to parent. It was quiet. Benny rolled slowly by himself from our presence. Spider was passed from arm to arm. Martin walked holding my hand. He was leading. Thomas Steward had to be carried. His eyes were a little older and sadder. Aaron wanted to push himself. Show his parents his strength and acorn necklace.

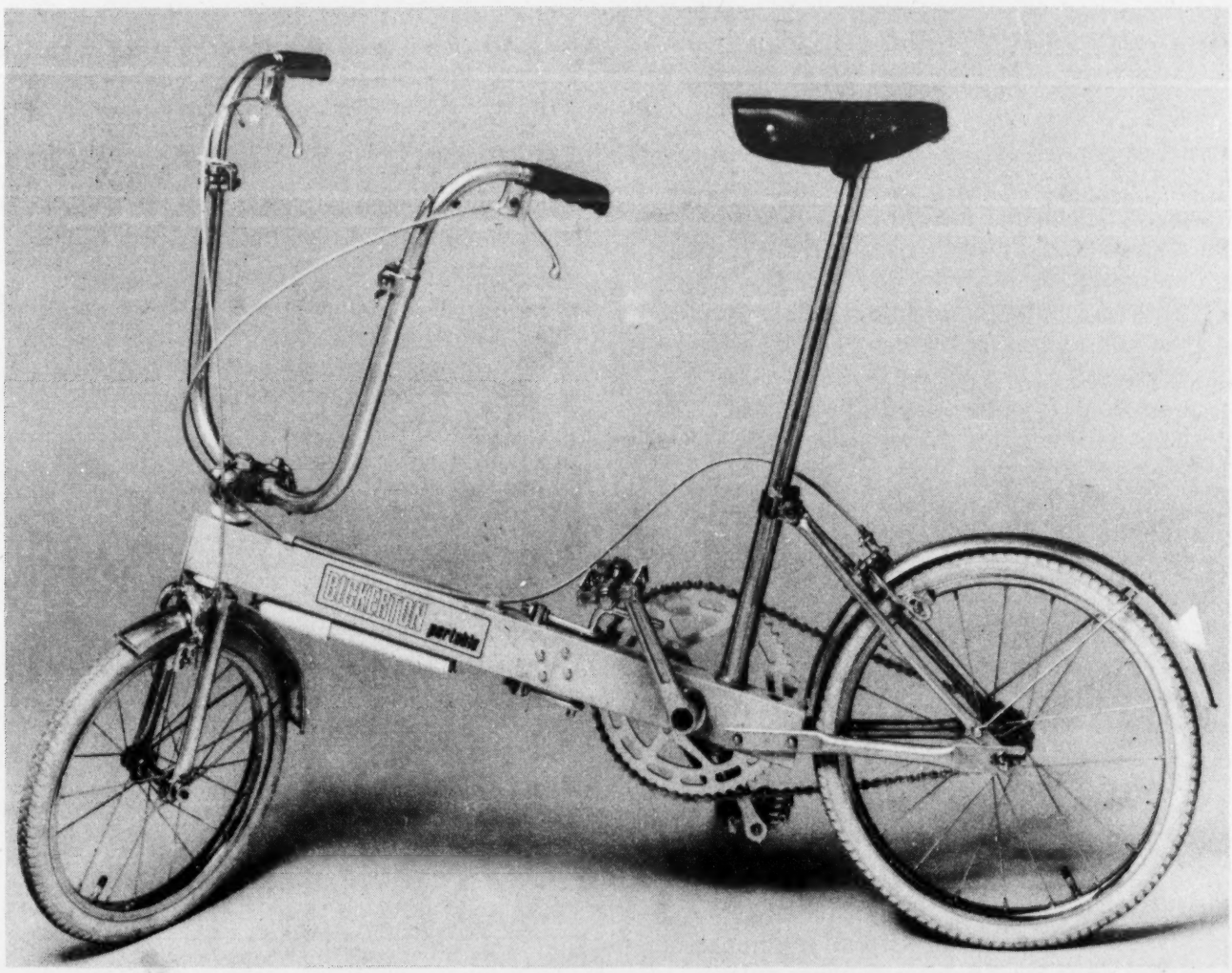
For many of the girl campers the farewell was of special significance. They had become young women. One carried a hidden crush. The word filtered to me like a breeze. Several girls broke from the goodbye with parents and hurried to the pool. I felt very embarrassed by this rendezvous. They pushed and prodded one of their members forward and then vanished. It was a close friend of Mary – the girl Aaron had given his necklace to. She was equally embarrassed yet demanding of the situation. She had enjoyed summer camp. Loved my voice and enthusiasm. Thought I was a good pirate. Wanted to know if I would write. Wanted to hold my hand. Touch my face. I held her hand very gently. She asked me if I would close my eyes. If I would be at summer camp next year. If I would say goodbye. With a kiss. I bent down and touched her lips with mine. I would be here. I would remember summer camp forever.

This unexpected moment took me away. I didn't even see the members of the Acorn Society leave. I think they knew and even approved. They understood and felt many things I would never comprehend. They were racers, mountain climbers, observers, and kings. And they were dying. "Most wouldn't live past the teen years."

EPILOG

All the principal children in this story are now dead. Dominic and I kept in close touch with these children for five years. Dominic's connections with the Mafia turned out to be more real than story. With money from legitimate business and lots of volunteer help, Dominic and I conducted trips for these friends and an annual Christmas Party. Thomas and Aaron died one year after summer camp. Spider was killed by a car the following year. Martin died in a car accident four years later. Benny B. was the last child to leave this place. Of all the children he was the only one to have a funeral. At the final service Benny's mother gave me a white envelope. Inside was a crumpled acorn necklace. She said he gave them to everyone he met. ■





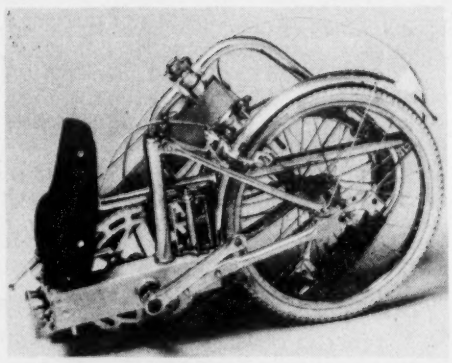
Bickerton Bicycle revisited

That most portable of the portable bikes (we remarked on it in Summer '75 CQ*) looked good enough to buy, so we did, and we're glad. Actual city use shows that it really can solve the problems of theft (wad it up and take it in with you) and portability. On public transportation you stuff it into the canvas bag supplied and the conductor will never know it's there. It's light enough at 18 lbs. to stow in the overhead luggage racks in buses! In your car, just flip it into the trunk. Yes, even in a Honda.*

The folding-unfolding ritual, which takes about 30 seconds with practice, is a rather fiddly and undignified procedure. The riding, however, is beautiful. The little guy is unusually resilient as it eels its way over bumps, and the super-high (3-speed) gearing lets you fly down the road with the effortless ease of a good 10-speed. Mr. Bickerton's background as an aircraft designer shows in the all-aluminium construction which seems sturdy and clever though "not for apes" as he says. Nice job.

—J. Baldwin

Bickerton Portable Bicycle
$240.00 (approx.)
from:
Bickerton Bicycles Ltd.
84 Brook Street
London W1Y 1YG
England



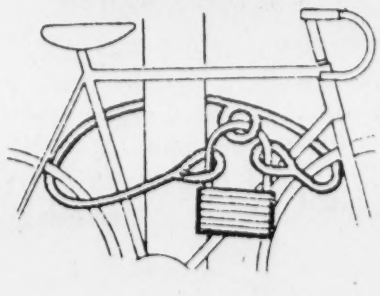
Golden Bear MK 2 Bike Locking Cable

Every little bit helps. This cable is certainly cuttable, but it takes longer because the tiny wires in it are more likely to squash than fracture in the jaws of the enemy boltcutter. Moreover, it has to be cut twice, and it's no more vulnerable than the monster chains seen these days.

—J. Baldwin
[Suggested by Tom Smerling]

When we first started using this cable we were concerned that the medium-sized diameter (3/8") would reduce its effectiveness as a deterrent. It doesn't look very intimidating. But of the 1200 cables we've sold over the last two years, matched with a Master 17 lock, we have had reports of no more than half-a-dozen successful thefts. . . . That's about all you can ask from a cable.

—Tom Smerling
Freewheel Bike Coop
Minneapolis, Minnesota



Golden Bear MK 2
$8.00 (approx.)
from your local
bike shop or:

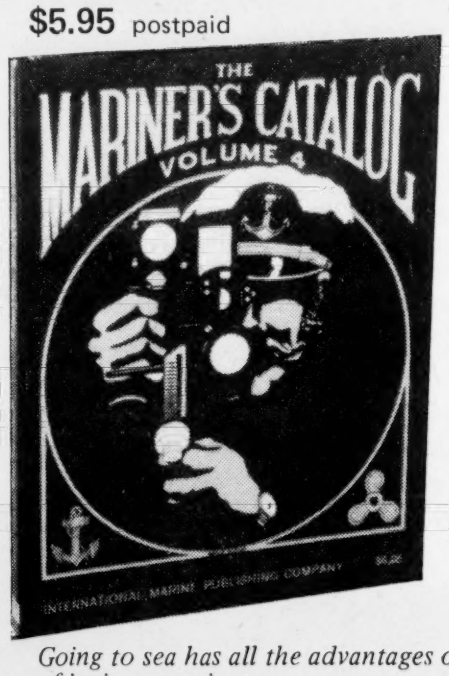
E.B.M. Corp.
125 N. Nopal St.
Santa Barbara, CA 93103

The Mariner's Catalog Volume 4

Mariner's Catalogs are most commonly referred to in an indignant howl, e.g., "Where the HELL is my Mariner's Catalog?!" (Matter of fact I can hear Stewart right now). About the only way you can keep one is to nail it to the table. Like its well-reputed predecessors, Volume 4 accompanies the items or phenomena with a fine, Maine-flavored personal commentary that's hard to resist. As is their custom, there's no duplication of previous Mariner's Catalogs, which are still available at their original prices.

—J. Baldwin

The Mariner's Catalog
Volume 4
George Putz & Peter Spectre, Eds.
1976; 192 pp.
$5.95 postpaid



Volume 3
George Putz & Peter Spectre, Eds.
1975
$5.95 postpaid

Volume 2
David R. Getchell, et al.
1974
$4.95

Volume 1
David R. Getchell, Ed.
1973
$4.95 postpaid

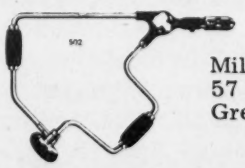
All from:
International Marine Publishing Company
21 Elm Street
Camden, ME 04843

Going to sea has all the advantages of suicide without any of its inconveniences.

—William McFee

•

And if ratcheting two feet of bit through oak from a location six inches off the floor or out from the wall is not your cup of kumquat extract, here's a handy item from Miller's Falls:

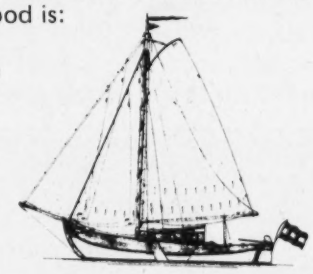


Millers Falls Company
57 Wells St.
Greenfield, MA 01301

Dutch craft are reliable and forgiving. They sail and ground on their bottoms and provide tremendous room for their length. In all respects, leeboards are superior to centerboards. That is not an iconoclastic remark of "an inspired but controversial" designer in an "interesting if offbeat" publication; it is a fact. Leeboards do not compromise the strength or add to the cost of the keel. They slip and cavitate less. There are no trunks to collect rot, rocks, and sticking boards, and the cabin is not suddenly divided into his and hers. You can fix them without bringing catastrophe down on the season, and they can be built as strongly as desired — no thickness limits — and you can see the pennant and fittings entirely. So there!

Manufacturing many of the traditional models of Dutch craft in both steel and wood is:

Koojiman en de Vries
Deilsedijk 62 u
Deil a/d Linge
Holland



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Anyway, we were jovially "filling" our canvas, as per instructions, with five coats of marine paint — two primers and three finish coats — when some clerical type in the company mentioned that by so doing we were doubling the *weight* of the boat and the *cost* of the boat. "Cripes almighty," somebody said reverently, "we're 'sposed to finish the boat, not the customer!"

And then some bright friend says something like, "Well yer such a dimwit, ya deserve it." He, not knowing that we are only in a dimwit disguise, was promptly cajoled into revealing this awful secret: AIRPLANE BUTYRATE DOPE!

Of course! What idiots we had been! Henceforth, we shall go to our local small-craft airport, locate the supplier of aircraft dope, and (Kapowee) a light, smooth, easy-to-apply, quick-drying, noncracking, tough, controlled-shrinkage surface for kayaks and canoes will be gained.

Colored dopes run about $20 per gallon. Clear dope is less than half that. You can also get thinners, retarders, fungicidals (fungus is always a problem on the canvas undersides in marine craft), and related materials. We received our information from:

Van Dusen Aircraft Supplies
P.O. Box 232
East Boston, MA 02128

Check your local airport. Can you imagine a two-seat biplane trying to get off the ground filled and sheathed with *marine* paint?!

The Craft of Sail

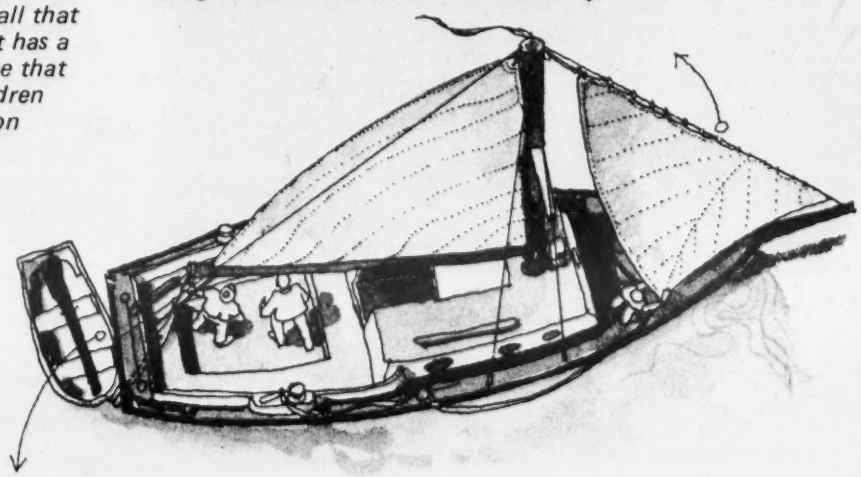
If you sail and take people along who don't sail, your entire sense of self-worth may disappear when a passenger asks what makes the boat go and you can't explain properly and get huffy and they have to pretend they understand and then sit quietly feeling stupid and unhappy. This book solves all that — it's the only one I've seen that does. Furthermore it has a singular fineness of illustration, writing, and experience that makes old salts study it with the same pleasure as children do. Author Jan Adkins illustrated our unusual letter on p. 74 of this CQ.

—SB

The Craft of Sail
(A Primer of Sailing)
Jan Adkins
1973; 64 pp.
$6.95 postpaid

from:
Walker & Co.
720 Fifth Avenue
New York, NY 10019
or Whole Earth

"Back the jib" – another crew member holds the jib out to starboard so the backwinded jib will push the bow around to port. The skipper reverses his tiller so the stern will swing to starboard as the boat backs up.



Standing Wave

BY SCOTT THYBONY

The waves caused by such falls in a river differ much from the waves of the sea. The water of an ocean wave merely rises and falls; the form only passes on, and form chases form unceasingly. A body floating on such waves merely rises and sinks – does not progress unless impelled by wind or some other power. But here the water of the wave passes on while the form remains.

–J.W. Powell, The Exploration of the Colorado River and Its Canyons

The Grand Canyon. From: *The Exploration of The Colorado River and Its Canyons* by J.W. Powell.

fall/72
In canyon country dawn descends upon you, night rises around you.

The early twilight on the canyon bottom draws out a bat that swoop-feeds low over a seep spring while high above a red-tailed Hawk playing the currents folds in its wings and dives from late afternoon into evening, through degrees of season, past 20 million years of geologic strata, and hits into the bat. Connectedness.

72
Sitting quietly away from the river in a scoop of the rock wall the sound of spring water seeping from the roots of pre-cambrian mountains brings earth memories. The living stone translated to dream by the deer that bends to drink.

winter/72
The Forming of the Grand Canyon. Told by Jim Sampson, Navajo medicine singer.

"Long time ago at the very beginning of things there was only flat land where the canyon now is. In that place lived the male waters and the female waters. There was a great conflict between these two since the male waters were constantly striving to flow downwards, to move down, and the female waters were always trying to move upwards. This conflict resulted in a great struggle that eventually wore away a tremendous hole in the earth until finally the male waters broke away and flowed to the sea, and the female waters rose up as clouds and began drifting eastward bringing rain across the Kaibito Plateau, and over Tonalea, and eventually reached a sacred place called Black Mesa. There the clouds finally touched earth again. But Black Mesa is no longer sacred. Whitemen have built roads and buildings there and the clouds are afraid to touch the earth anymore. That is why it rains here very little now. Also when the whitemen built the dam at Page it backed up too much water, and the motorboats scare away the clouds with their noise."

A spillover from Peter Warshall's watershed issue, this is a collection of notes from the river logs and letters of Scott Thybony from Flagstaff, Arizona: "They span a number of years when I was working as a commercial river guide, research boatman for the park service, and experiential instructor on the section of the Colorado River that runs the Grand Canyon."

Thybony adds, "Other watershed possibilities: read Coleridge's 'Kubla Khan'; spend the evening tracing the course of Anna Liffey through Finnegan's Wake*."*

–SB

73
Wind in the earth. River rising as cloud. Ravens glide beneath hearing in counterpoint to the supersonics flying high above.

> *In the same river, we both step and do not step, we are and we are not.*
> –Heraclitus

> *He who hears the rippling of rivers in these degenerate days will not utterly despair.*
> –Thoreau

The last night, camped on Lake Mead I am rolled over by a dream and open my eyes and see a pillar of fire. As sleep falls away all that remains of the pillar is the reflection of the crescent moon on the rippling water.

75/instamatic experience
People are hungry for experience – of any type. Usually it is the people who are successes, who have almost everything, but who lack a story – a personal meaning, who come to the river. They pay their $400 to be guided through controlled disasters – ones that they are able to participate in, usually by way of their camera, and for which they have no responsibility. Many times I have made a good run of a difficult rapid to be greeted at the bottom with moans and complaints that it was nothing, that we had built them up for no reason. They come for disaster with a guarantee.

Once when I was training as a boatman our pilot had the engine quit on him at the head of a bad rapid. The current powered us sideways onto some sharp rocks at the bottom and began to flip us. The boat was at a 70° angle with one old man up to his armpits in water and unable to pull himself up. I climbed over to him and grabbed him up and got him off. As soon as he was safe a big smile eclipsed his fear as he told us that he would not have missed this for the world.

summer/76
Granite Park back-eddy. For days I have watched these scientists from my home state lay open their lives in their casual conversation under the willow tree, or in their grip on a rope in the tongue of a rapid, and I see that more than a continent separates us now. We don't seem to live in the same neighborhood. It's hard for me to figure. We share the same basic premises but something meaningful has been eroded away between us allowing the river of stars to flow down through the gap. What it is that has been lost I'm not sure, but we no longer share a sense of the sacred. As twilight rises up from the canyon an owl swoops low over the far edge of the Colorado but no one is interested.

Yesterday a researcher chased a large Western Spiney Lizard for half an hour before catching it and coming back to the boat feeling pleased and bragging.

'Did you ask that lizard's forgiveness before taking its life?'

He looked at me funny and I told him that he showed no respect for the life he takes and probably wouldn't until his own life was laid on the line. The researcher was quiet and rode on the far side of the boat.

As I look downriver a flat taste wells up in me and I feel the fall of man flowing through and try to think of other things.

the confluence/76
The head researcher on this trip is a well known ichthyologist with North America's largest fish collection. One fish that he didn't have was the rare, endangered species, the Humpbacked Chub which he had been hoping to find during the 12 previous river trips he had made. Three years ago he had actually caught a chub but their raft broke up in one of the large rapids and he lost his specimen.

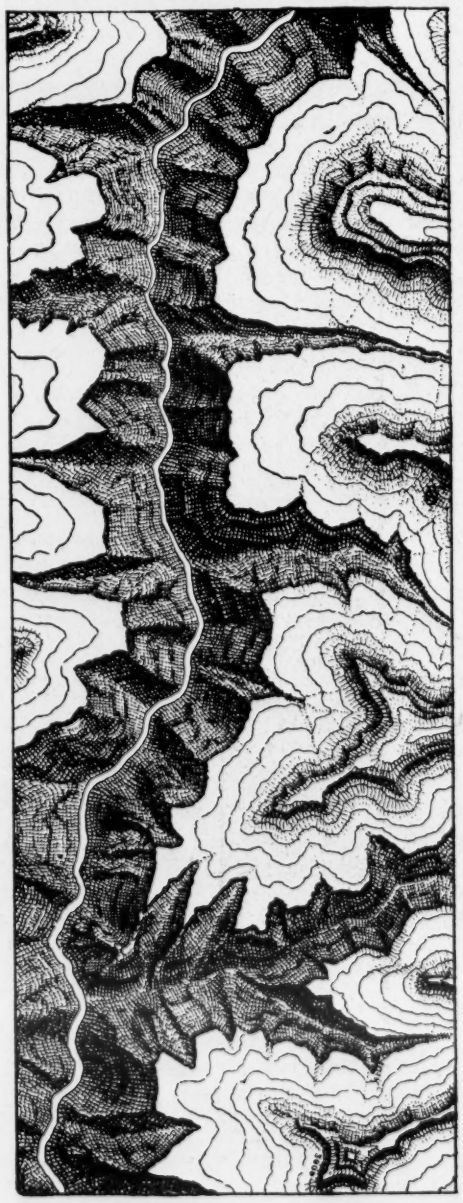
We pulled into the mouth of the Little Colorado to let the researchers sweep the shallows with their seine nets, and were there only a short time when a commercial party pulled in and tied up next to us. I was leaned into some 10 o'clock shade talking to several of the researchers when the boatman from the commercial trip, Big Jim Hall, ambles over.

'Would those guys down in the river like me to catch them one of those humpbacks? I know where a school of them are, but I'd have to use a hook and bait.'

The other researchers sitting around were turning red trying so hard to hold in their laughs. I told the boatman sure to go ahead. He had a look in his eye that seemed to say he knew what he was talking about and probably could have described right then exactly what that rare chub tasted like.

The boatman moved a short way up the river to his fishing hole, rolled a little blood bait onto the hook, and threw in his line. As soon as the hook hit the water the boatman was reeling in a chub.

The head researcher saw from the river what had been hooked, dropped his work, and moved quickly to the catch. The boatman asked him if he needed any more and the researcher hurriedly said four. Back near the boat researchers were bumping into each other running to get their cameras and notebooks. Within 20 minutes the boatman had pulled in four of the rare chubs, but that wasn't the end of it. The fever struck. The other researchers became hungry for their own specimens, grabbed the seine net and started sweeping the boatman's fishing hole. After an hour all they had caught were a few fingerling suckers. They didn't know the boatman's song. ■



Rolf Cahn gives guitar lessons by tape

I am a mediocre harmonica player who found music in Boston way back when Joan Baez was a coffeehouse chicano. Rolf Cahn and Eric Von Schmidt were the hottest thing around. Nobody realized that white boys could play the blues, but they could, and proved that white soul music doesn't have to be blue-eyed and Nashville. Read Bobby Z. Dylan's biography. He learned from Rolf.

Rolf is 52 and still teaching. Now he has come up with this cassette idea, where if you don't know anything about guitar you send him eight bucks and get his two-casette beginner guitar lesson. If you know something, you send him a cassette of yourself and eleven bucks and he sends you a cassette back letting you know what you want to know. Doesn't only have to be the blues. He is a versatile, great guitar player, and a fine teacher. Just this morning I learned a brief history of martial arts from him. (He wrote a gambling article in the Fall '75 CQ.*)*

—J.D. Smith

Rolf Cahn Tape Lessons
Brochure
Free
from:
Rolf Cahn
518 Buena Vista
Pinole, CA 94564

Computer Power and Human Reason

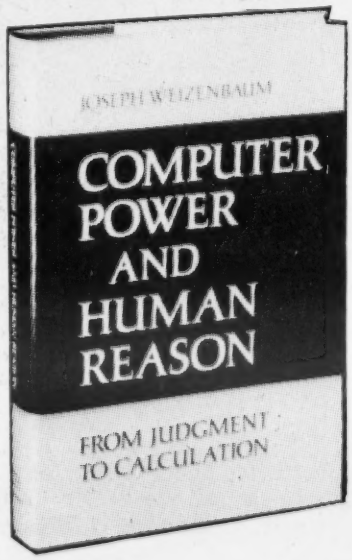
This book is a center of controversy amongst computerists, especially those working in the field of artificial intelligence. It has received extensive praise and criticism, stimulated a heated and often bitter debate in the technical journals and generally raised a ruckus. It accomplishes all this by raising serious moral and ethical questions regarding the use and social impact of computers.

My own attitude about this work is mixed — I feel the topic is important but the treatment is lacking. However it is unquestionably significant, if only because of its effects on the information processing community. Furthermore I have received several reviews of the book (all different) as well as other less formal commentary on it.

As a result of all this I would like to invite the readers of CQ *to send me your reasoned commentary not only on this book but on the whole issue of the social impact of computers — the idea being to open the question and initiate some dialog. In any event this book serves as a starting point.*

—Marc Le Brun

Computer Power and Human Reason
(From Judgement to Calculation)
Joseph Weizenbaum
1976; 300 pp.
$9.95 postpaid
from:
W.H. Freedman and Co.
660 Market Street
San Francisco, CA 94104
or Whole Earth



For my first experiment, I gave ELIZA a script designed to permit it to play (I should really say parody) the role of a Rogerian psychotherapist engaged in an initial interview with a patient. The Rogerian psychotherapist is relatively easy to imitate because much of his technique consists of drawing his patient out by reflecting the patient's statements back to him. The following conversation between a young lady and ELIZA playing doctor illustrates both the Rogerian technique of encouraging a patient to keep talking and the operation of the computer program ELIZA. The first to "speak" is the young lady. The computer's responses are printed entirely in capitals.

Men are all alike.

IN WHAT WAY

They're always bugging us about something or other.

CAN YOU THINK OF A SPECIFIC EXAMPLE

Well, my boyfriend made me come here.

YOUR BOYFRIEND MADE YOU COME HERE

He says I'm depressed much of the time.

I AM SORRY TO HEAR YOU ARE DEPRESSED

It's true. I am unhappy.

DO YOU THINK COMING HERE WILL HELP YOU NOT TO BE UNHAPPY

I need some help, that much seems certain.

WHAT WOULD IT MEAN TO YOU IF YOU GOT SOME HELP

Perhaps I could learn to get along with my mother.

TELL ME MORE ABOUT YOUR FAMILY

My mother takes care of me.

WHO ELSE IN YOUR FAMILY TAKES CARE OF YOU

My father.

YOUR FATHER

You are like my father in some ways.

WHAT RESEMBLANCE DO YOU SEE

You are not very aggressive but I think you don't want me to notice that.

WHAT MAKES YOU THINK I AM NOT VERY AGGRESSIVE

You don't argue with me.

WHY DO YOU THINK I DON'T ARGUE WITH YOU

You are afraid of me.

DOES IT PLEASE YOU TO BELIEVE I AM AFRAID OF YOU

My father is afraid of everybody.

WHAT ELSE COMES TO MIND WHEN YOU THINK OF YOUR FATHER

Bullies.

DOES THAT HAVE ANYTHING TO DO WITH THE FACT THAT YOUR BOYFRIEND MADE YOU COME HERE . . .

The shocks I experienced as DOCTOR became widely known and "played" were due principally to three distinct events.

1. A number of practicing psychiatrists seriously believed the DOCTOR computer program could grow into a nearly completely automatic form of psychotherapy. . . .

2. I was startled to see how quickly and how very deeply people conversing with DOCTOR became emotionally involved with the computer and how unequivocally they anthropomorphized it. Once my secretary, who had watched me work on the program for many months and therefore surely knew it to be merely a computer program, started conversing with it. . . .

3. Another widespread, and to me surprising, reaction to the ELIZA program was the spread of a belief that it demonstrated a general solution to the problem of computer understanding of natural language. In my paper, I had tried to say that no general solution to that problem was possible, i.e., that language is understood only in contextual frameworks, that even these can be shared by people to only a limited extent, and that consequently even people are not embodiments of any such general solution.

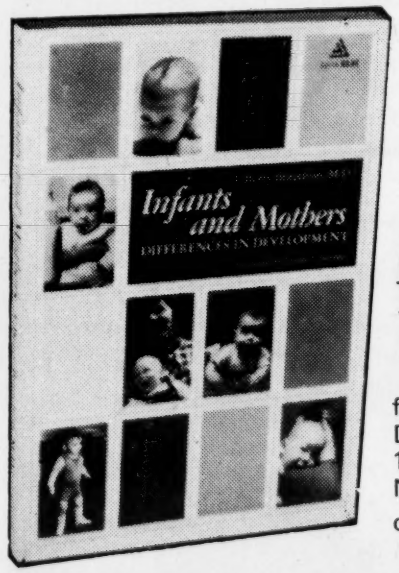
Learning

Infants and Mothers

If you buy only one book when your baby is born, it should be this one. Brazelton treats infants and their parents as individuals. Other books seem to assume that all newborns are pretty much alike; Brazelton shows that from birth each baby has its own style, its own patterns of activity and response. "The baby" in other books always made me uneasy because it never did the crazy things my baby did; but in Brazelton's portraits of three types of babies and their parents I found glimpses of my daughter and myself that enlightened and comforted me and helped me recognize and respect my child's individual style. When her behavior bumped into my preconceptions, Brazelton reminded me that it was my expectations that were wrong, not the baby.

Brazelton squashes the ideal mother myth. He recognizes that there are as many ways of parenting as there are parents. While he offers plenty of suggestions for dealing with specific problems, he also offers support for parents in finding their own best way. **Infants and Mothers** *is probably the most complete book on the first year of life. It covers the kind of information you find in Dr. Spock and is far more enjoyable to read. Brazleton has a second book,* **Toddlers and Parents**, *that deals with the second and third years. It's also terrific; but I'm not reviewing it because once you've read his first book, you won't need any encouragement to pick up the second.*

—Linda Williams



Infants and Mothers
(Differences in Development)
T. Berry Brazleton, M.D.
1969; 296 pp.
$5.95 postpaid

from:
Dell Publishing Company, Inc.
1 Dag Hammarskjold Plaza
New York, NY 10017
or Whole Earth

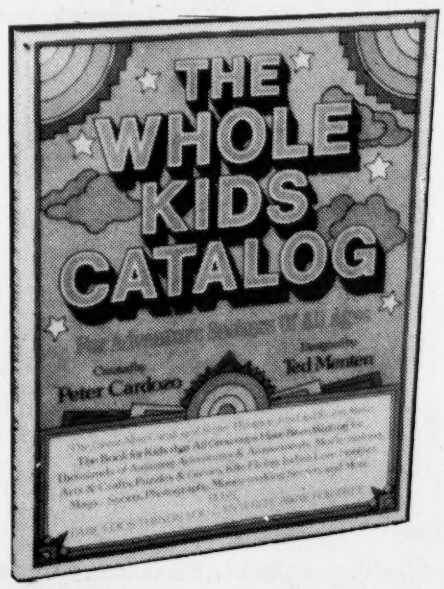
After the feeding had begun, and he had gulped down the first part of it, he stopped in the midst of the feeding to look around, to smile up into her face, or to watch his own hands. She could jiggle his head and get him going again, but the feedings were interspersed with bits of play. When one of the other children came into the room, he stopped briefly before he continued.

All of these bits of play at feeding time may be exasperating for a mother who is in a hurry. They are solid gold for the infant. It is his most receptive time. His physiological needs are being met. He is in a satisfied, receptive state, and each experience that occurs at this time must take on a heightened value. A baby savoring these moments is like a chubby old man savoring his cigar at the end of a delicious, filling meal.

The Whole Kids Catalog

Access to non-plastic goodies for kids. Mostly covers books about how to do almost anything — watch birds, bake bread, make books, sew your own dinosaur, read tarot cards, produce a puppet show. Rah rah reviews and busy, witty graphics keep you reading and wanting to get the books and try it all.

—Anne Herbert



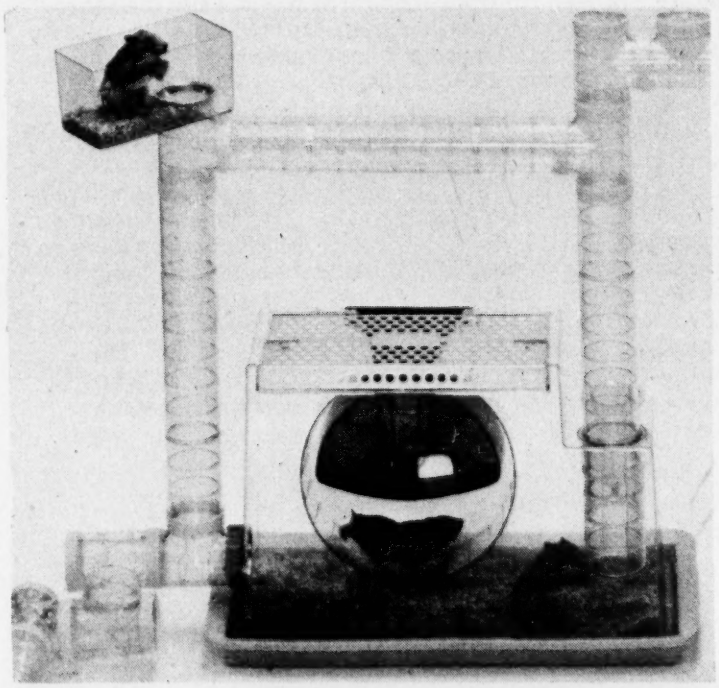
The Whole Kids Catalog
(For Adventure Seekers of All Ages)
Peter Cardozo and Ted Menten
1975; 218 pp.

$5.95 postpaid
from:
Bantam Books, Inc.
666 Fifth Avenue
New York, NY 10019
or Whole Earth

Science Experiments You Can Eat

Your kitchen is equivalent to a well-equipped laboratory, and there are many things in it worthy of scientific inquiry. In this book 39 experiments suggest ways to investigate the properties of solutions, suspensions, colloids, and emulsions; the cooking action of microbes and enzymes; and phenomena concerning carbohydrates, fats, and proteins.

You can make your own "litmus paper" from red cabbage and test acidity of foods. The freezing point of solutions is fun to explore when the end result of the experiment is a batch of popsicles. **Science Experiments You Can Eat** is written by Vicki Cobb and illustrated by Peter Lippman. Age 10 and up. J.B. Lippincott Co. $2.50.

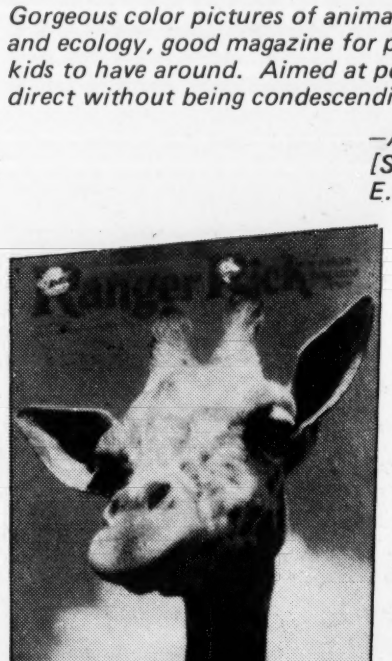


Small animals adapt more easily than large ones to new natural conditions, and the most natural condition you can create for your hamster or gerbil is the Habitrail, a whole world of clear plastic houses connected by tube tunnels which you can rearrange or add on to. This is the most interesting concept in home animal care to come along in years; it is much neater than an open wire cage. Enjoy watching your pet have fun running around the exercise wheel, through the tunnel, or up into the sky house. Habitrail is made by Living World; you can get sets and accessories from most pet shops or pet departments.

Ranger Rick's Nature Magazine

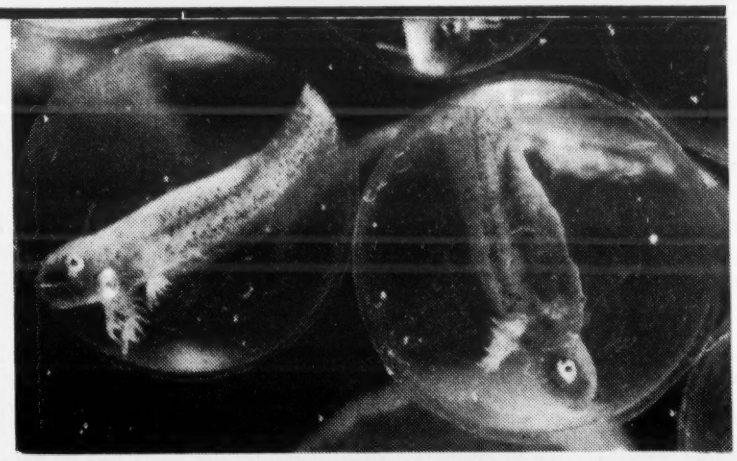
Gorgeous color pictures of animals, good articles on wildlife and ecology, good magazine for parents and teachers and kids to have around. Aimed at people 8 to 12 years old — direct without being condescending.

—Anne Herbert
[Suggested by
E. Gerald Bishop]



Ranger Rick's Nature Magazine
$7.00 /yr.
(10 issues)
from:
National Wildlife Federation
1412 16th St., N.W.
Washington, D.C. 20036

Giraffe tongues are 55 centimeters (21 inches) long and prehensile. This means that they can curl their tongues around leaves and pull the leaves from trees. *Okapis*, close relatives of the giraffes, have such long tongues they can use them to wash their eyes and ears.



When the first animals came ashore millions of years ago, they had to remain near streams and lakes so the females could release their soft eggs into the water. On land the eggs would dry up and die. . . .

Gradually, through millions of years, the wonderful egg with a tough shell came into being.

This egg, while still inside the female's body, must be fertilized by the male animal before the hard shell covers up the soft egg.

Inside the shell is the baby animal (embryo) and all the food (in the yolk) that it needs to grow.

A liquid-filled sac supports the weight of the embryo. Like the waters of a stream or the ocean, the liquid keeps the baby from drying out and cushions it against shock. . . .

Thanks to this marvelous invention of nature, animals were able to travel far and wide on land, seeking out new places to live, sometimes far from water . They could lay their eggs in dry, sheltered places and leave them to hatch.

Fifth World Tales

I love the murals in Mexico and in San Francisco and have had for a time the fantasy of transforming them into books for children. Murals tell tales. Because they are so large it is possible to range over space and time on a single wall. They are full of detail and reference and visual tricks — all the things that make for books that interest children. My fantasy has been realized. **The Fifth World Tales** *is a series of 10 books for children that seem to flow out of the murals. The books consist of legends from Guatemala, the Philippines, Costa Rica, Mexico, Peru, Bolivia, Nicaragua, Puerto Rico, Chile and Colombia, adapted into modern English and Spanish by Harriet Rohmer, Mary Anchondo, and Jesus Guerrero. Each book was illustrated by a different painter or group of painters. Most of them are muralists; all of them are Latinos. The work is bold and exciting, full of movement and detail. The books are printed in four colors and seem so delicious that a number of children I read them to tried to lick their pages. Each artist does something different with the stories and the collective work is as modern as the work of Sequiros and as old as Maya and Aztec and Inca. The books are magical for children and for us too. I've been crazy enough to buy two sets, one to read and one to cut up and hang on the walls to decorate my study.*

—Herb Kohl

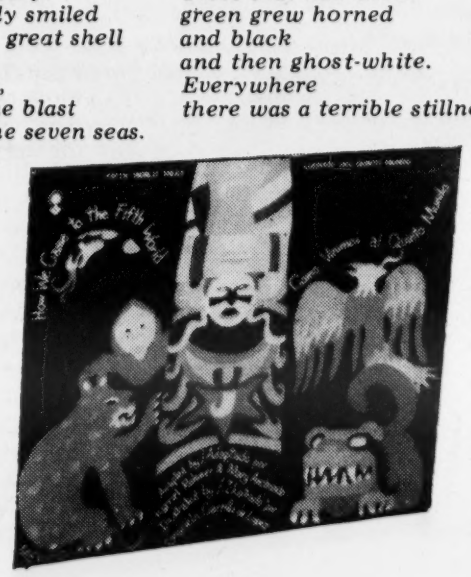
The undersea creatures
spread out over the land,
imagining that they
had won a victory.
But Na Ha only smiled
and raised the great shell
to his lips.
Triumphantly,
he sounded the blast
that rocked the seven seas.

Within moments
the world was far, far colder
than it had ever been.
Trees that had been
green grew horned
and black
and then ghost-white.
Everywhere
there was a terrible stillness.

Fifth World Tales
(Legends in Spanish and English for all the children of North America)

Skyworld Woman/
La Mujer del Mundo-Cielo
The Little Horse of Seven Colors/
El Caballito de Siete Colores
Land of the Icy Death/
Tierra de la Muerte Glacial
How We Came to the Fifth World/
Como Vinimos al Quinto Mundo

and 6 other titles,
all 1976; 20 - 24 pp. each.
$2.95 ea. postpaid
Catalog free from:
Children's Book Press
1461 Ninth Ave.
San Francisco, CA 94122



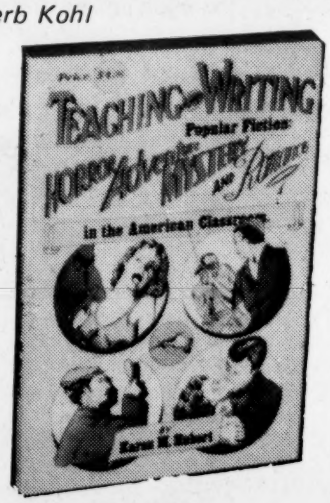
Teachers and Writers Collaborative

The best way to teach reading is through writing. As a child comes into contact with his or her own voice, the idea of putting words on paper begins to make sense as does the idea that books contain other people's voices. The best material on developing a writing program that allows children's imagination to flow is produced by the Teachers and Writers Collaborative. This material comes out of work with children in school and is full of practical suggestions and examples of young people's writing. The Collaborative produces a newsletter that has features like how to make comic books, photonovellas, films and videotape scripts. It also features accounts of different ways of approaching poetry, fiction, fables, plays. I find the material helpful for my own writing as well as for children.

The Whole Word Catalog *is a useful collection of different things that can be done with writing. Karen Hubert's book* Teaching and Writing Popular Fiction: Horror, Adventure, Mystery and Romance in the American Classroom *is simply marvelous. She has all the formulas for popular writing down cold. I've thought of using her ideas to turn out a few pulps myself. There are other helpful publications as well.*

—Herb Kohl

Teaching and Writing Popular Fiction: Horror, Adventure, Mystery and Romance in the American Classroom
Karen M. Hubert
1976; 235 pp.
$4.00 postpaid



The Whole Word Catalog
Rosellen Brown, Marvin Hoffman
Martin Kushner, Phillip Lopate
and Sheila Murphy, Eds.
1972; 72 pp.
$4.00 postpaid

Teachers and Writers Collaborative Newsletter
$5 /3 issues; **$9** /9 issues
Sample newsletter and catalog free from:

Teachers and Writers Collaborative
186 West 4th Street
New York, NY 10014

Write the curse uttered by a dying, bitter woman. Why is she bitter? Whom or what is she cursing? (Curses may be very specific. For instance, one might curse the third son of a third son.)

—Teaching and Writing Popular Fiction

•

You have been caught! Knocked unconscious by your enemies, you wake up in a dark cell with no windows. There is no way out: you cannot even find a door. You wonder where you are. Start recalling all the events that led to your capture. (Tell the story as it happens or as a flashback.)

—Teaching and Writing Popular Fiction

•

Alliterative Poems — Each line has many words beginning with the same letter. E.g., "The brave bumblebee bounced off the black Buick." The poem could continue with all b's or using different letters in each line.

—The Whole Word Catalog

[Hey, me and my buddy John Edson did one of those when we were about 10 or 11. Let's see . . .

The gorgeous gorge is gorged in gore.
The trees are tipping tritely
The west wind's woe is weird and wild.
The sand is slipping slightly.

—SB]

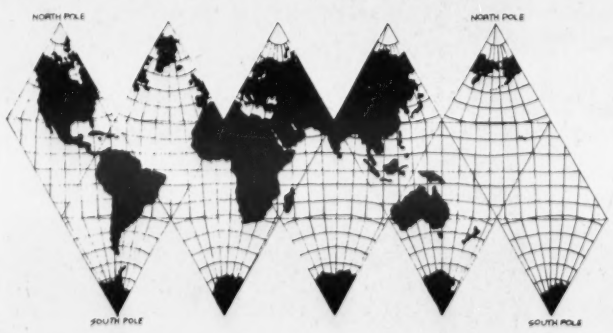
How to Make Your Own Educational Materials

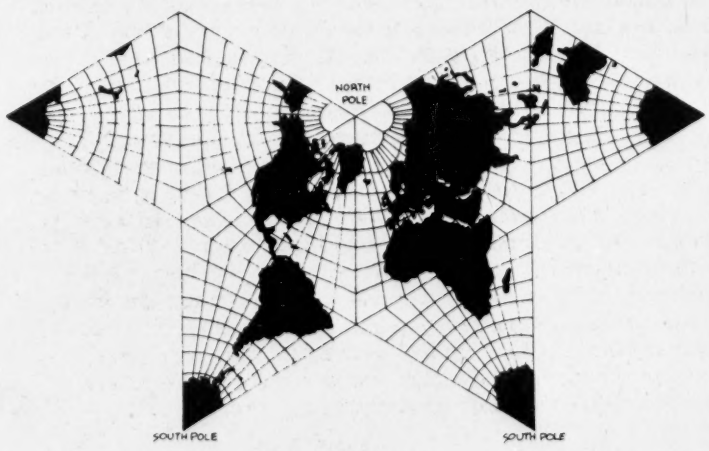
Schools are great boosters of the consumer society; they seem to shun the idea that people are capable of producing anything useful for themselves. How to Make Your Own Educational Materials *is a frontal assault on this buying-is-better mentality. It offers good practical guidance in setting up a small scale workshop where parents, teachers, and students can work together to make low cost educational materials. Directions for making books, puzzles, games and simple musical instruments are included. There's enough here to get you started and a bibliography to help you begin to explore the possibilities of this kind of self-sufficiency.*

—Linda Williams
[Suggested by Herb Kohl]

How To Make Your Own Educational Materials
Cynthia Brown and Ray Nitta
1977; 72 pp.
$4.00 postpaid

from:
The Center for Open Learning and Teaching, Inc.
2520 Shattuck Ave.
Berkeley, CA 94704
or Whole Earth





Rectangular maps of Earth are all distorted in some way, since Earth is not a rectangle. Printing the surface of a sphere in this book is not within our scope, so we offer the two maps on the following page as alternatives to the usual rectangle. It is no wonder that children learn to think of Earth as a rectangle, if that is the only way they see it mapped. . . . Cut them out and make them into puzzles by pasting them on poster board, mat board, or luan mahogany plywood (doorskin). Cut them out with a utility knife and a straightedge. Cut the butterfly map into eight triangles. Cut the icosahedron map into ten diamonds or twenty triangles, depending on the difficulty you want. The pieces can be covered with clear contact paper for longer durability, if you used cardboard. If you used luan mahogany plywood, give the pieces a coat of plastic varnish. These maps are fascinating because they can be correctly assembled in many different ways. Find out how many.

BENNY

BENNY DIVENNIS

Interviewed by Dan Cassidy & John Levin

Illustrations by Jay Kinney

Junkies die young. At 65 Benny Divennis is an exception to the rule. He has smoked it, shot it, horned it, and ate it for the last 45 years. In the thirties Benny "laid down" with the founders of San Francisco's China Basin, hung out in Shanghai's fabled Forbidden City, and smoked hop in the opium dens of every major port on the Pacific Rim.

Like many survivors of past eras Benny is uncomfortable and resentful of the contemporary world where there is no longer a place for him. Benny is contemptuous of the present day addicts ("They ain't dope fiends; they're garbage fiends."), but also understanding; "They're unhappy and full of piss and vinegar – youth. They want to live like everybody else with a car and a pad and a broad. And they can't get a job. They gotta have money so they think if they can just get an ounce of shit, maybe they can get $10,000 for it. They'll come in on a surf board with it. I would."

The detoxification ward where we interviewed Benny is located in a wing of San Francisco General Hospital, an imposing red brick structure that overlooks San Francisco's Mission District. Benny greeted us in his institutional pajamas and bathrobe. He is a short, stocky, barrel chested man who walks with the gait of a seaman. His steel rimmed glasses and white hair give him the imposing air of an elder statesman. Benny escorted us to a visiting room, got us some coffee, and proceded to talk non-stop for the next three hours. . . .

See, I can go back in the thirties. When I first came out here, San Francisco was a town. Ya had whore houses on 6th Street; 2 dollars, a buck and a half. If you didn't pop your cookie the landlady gave ya a raincheck. Yeah, onna square. Then, if you was a steady customer – like on 16th and Loma – she'd take ya to the kitchen, if they was busy, and give you a shot of Grand Dad or two. Then if you was a seaman, a steady customer, you could always borrow 10 or 20 dollars. It made no difference if you paid 'em or not. Nevertheless you did.

Then ya had Turk Street with the rounders, the baileys, the card rooms. Ya'd hang around the pimps, the gamblers, the McGimps, the high rollers. And they're half legit. It wasn't like now, all this muggin' and heavy shit.

I always sailed transpacific. I made 19 trips around the world. An I'm ready to retire next year. I'll get my full Social Security. But I don't know where to go. I'm tired of populations. You know, I've seen everything, I've done everything . . .

I was born in Yonkers New York; raised on 13th Street, lower Manhattan. My dad moved to Jersey City, when I was 7. He worked for the Pennsylvania Railroad. 9 years old, I went up ta' reform school in Bayonne, playin' truancy and a few other things. All right, then when I was 15 they wanted to put me back in reform school I took a hike. I went over to New York to South Street. That's the Seaman's, you know, 25 South Street. I said, "I wanna go to sea." Well, how do you go to sea? You gotta have discharges. Well, how do you get discharges? You gotta go to sea. So I finally figured it out: give 'em a pint of whiskey and a 2 dollar bill and the dispatcher wrote me out 2 or 3 discharges.

I went aboard ship in Weehawken, the S.S. *Kissaquillis*. The mate said, "You an ordinary seaman?" I says yeah. He says, "You got any discharges?" I said, "All kinds of 'em."

So ya turn to in the morning, sail at noon. We skipped into New Orleans. Of course, they found out I was a popcorn, an apple, and I got fired. But nevertheless I had a little savvy then. I sailed from there to Europe on the U.S. Line, the *President Harding*, a coal burner. And then in '31 I came to Frisco onna round the world trip.

In Frisco I got acquainted with a lot of rounders. They had a little honor. Principle. They had a code of ethics. And that was the burglars, the thieves, the gamblers, the pimps, the bookmakers. As I went along I got introduced here and there and that's how I got to know a few rounders that were smokin' hop. I got invited and I went and laid down with 'em.

It looks like grease, like fudge. Sort of black. It came in little cans, which was an ounce. "A hundred & fun," we used to call it. You know, milligrams. The Chinese call it a "fun." You got 2 pills out of it. And then they had other cans. Big cans. They call 'em "five tail tins." They used to sell for 20 - 25 dollars a can just before the war. After the war, for Chrissakes, they were goin' for 5 or 6 hundred. Everybody backed away.

What we used to do, we'd go out and get drunk. Drink all day. Night time when the joints closed, 2 o'clock – you'd go home and lay down. I'd go home with you and your old lady and my old lady. Go to a hotel or apartment, and break out the layout. Ya smoke up. Get on the nod. And ya get up at daylight. Then ya took a ride around the waterfront, Fisherman's Wharf, over Twin Peaks, and went ta bed around 6 or 7 when everybody's goin' to work and get up around 3 or 4 innà afternoon. That was your day. That was the rounders.

All you got then was a fuckin' "bunny rabbit." You know what a bunny rabbit is? It's a little habit. Then what I did before I got back on ship was get a bunch of ashes from the bottle. Hop ashes. And then I just boiled it. Put it through a handkerchief and strained it and threw the dirt away. And then I'd take a teaspoon-full in the morning and a teaspoon at night. And that would take me off like they do with methadone. I'd make up maybe a 2 or 3 ounce bottle or whatever and on the third day I'd take a teaspoon of water and put it in the bottle. And that way it reduces the potency. You detox yourself. That's the way they do it in China. Maybe they get a lemon peel, they put in to give it a tang. No problem, see?

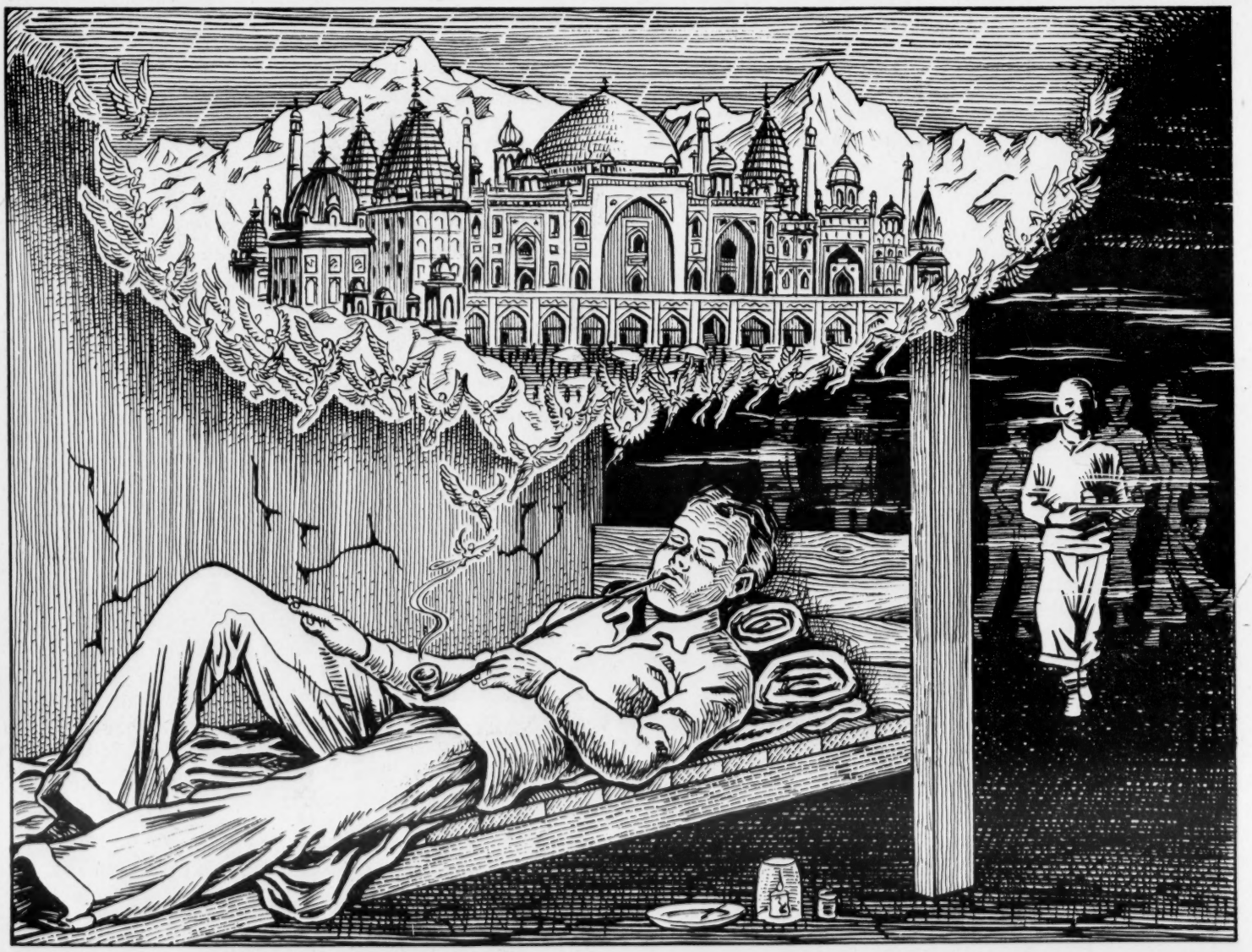
On a ship in them days you had maybe 2 or 3 guys that was users, you know, smoke. But they just chippied. They weren't addicted. They was just players. They used it for kicks, you know for pleasure. Not like they do today, like a necessity. Everything was different in them days. And then your law enforcement, Anslinger, he started making a big thing about hop and publicizing it, magnifying it in the paper. The money involved and everything.

In them days it was just a wise guy, a promoter, a hustler who got a little juice. Got in position to get his hands on the shit. And you approach him. "Get me 5 pounds." And then you make your move. And then it's from there to there and down the line with Maggie Klein. But that's a thing of the past-Pasadena. Of all the users, the promoters I knew, there was no big man. Generally, anybody brought in shit, it was just for consumption. And you'd give it away if your ship was sailin'. That's what we used to do. You didn't buy no fuckin' homes, cadillacs, mansions and ranches, all that shit. You'd bring in just enough stuff to break even.

I used to sail in the summertime. In the wintertime I'd go over to Honolulu. Lay around, see, and spend the winter there. I'd stay in Kalua and Waikiki, that area. I got to know a lot of ship mates, Kanakas and other guys. I'd stay there until I got tired. Then go to Frisco or Seattle or Portland. You know, just driftin' here and there. That's what a fuckin' sailor is, just a vagabond. But actually I spent most of my time in San Francisco because it's my home port. It's headquarters.

So then when I sailed transpacific the first port was Hong Kong. I'd go to a hotel right in Kowloon. I want a broad: they got me a broad. I wanna smoke hop: the bellboy come with a tray with the layout. I sample it. Then I take a pick. Whatever I bought to smoke and enjoy the evening with would amount to about a buck. Two dollars at the most. And then I had a little young broad, 16 or 17, who cooked for me and rolled it up. And then if I wanted to play the string out or pump her up or romance her, it was alright too. And away you go.

You could get hop anyplace in China in them days. Shanghai they had what they called the Forbidden City. Had an area like the Tenderloin where you could gamble; get a shot of junk. It was like a carnival with tents where you could lay down and smoke, see. And then they had



little vendors, little stands, and guys'd be peddlin'. They had big chunks of opium, raw, in gum, in slabs. And if you wanted an ounce or so, they cut off a chunk.

Then you go to an apartment or a home and put it in a copper pot and added water and cooked it, see. And wait till it got stringy, just like syrup, that's all you did. You got a geng-hok and you put it over a fire, cooked it, rolled it up. Of course, it's an art, rollin' a pill. It ain't easy. Christ, I ruined a lot of shit before I learned how to roll a pill. Probably take me half an hour before I got back into the groove. You know, it's like molasses. You put it over the fire and kind of bake it gently. Then you add a little more till you think you got the right size pill. Then you roll it up in a ball and take all the water and dampness out of it. It's a hard pill. Then you put it in a bowl or bottle and ya had a tube with a little hole in the bulb. You never seen it?

Now when you got to Manila all ya did there was drink that Manila gin or beer. And you could go to Japan with a 10 dollar bill. 10 dollar bill all night. You got broads and everything else.

You take Saigon. They had regular big fuckin' garages with stalls. People layin' down and everybody smokin' hops. Very seldom do you see a chinaman usin' a needle. The only times they use a needle, times get hard. Their kick is smoking. They relax; they're easy going. All they want to do is sit around and puff and bullshit and be on the nod. You know, you see 'em do it on the natural. So, like in Saigon in the fuckin' joint, there's be maybe 50 of them smokin'. And it was legal. And you could hear all them bubbly pipes goin'. You know, they're suckin' and blowin' that blue smoke.

Singapore was the same. And Bombay, shit, if you got caught with a bottle of whiskey you'd do a year in jail. But you could smoke all the hop and hash. No problem. That transpacific used to be a helluva run. . . .

In the 30's in China you used to be able to buy an ounce of heroin – pure shit – for about 15 dollars. You could make six out of one. But then nobody wanted it. The guys smokin' hop didn't care for it because it was too strong. All we wanted was a lift. Not The Big. See, we didn't want anything stronger to knock us out. What we wanted was to get the boot – to feel better. That's the purpose.

But then when hop got hard to get; well, we had to go to something. We went to schmeck – on the Horse and Wagon. Well, when you get hung up on H., hop is too mild. . . .

Opium's down to a nil now. It's hard to score. It used to be legal in Hong Kong. The British Government sold little tubes of shit. One be a half a buck, another 2 dollars. And they had joints, just like boot-leggin' joints. It was lax. Then this government put pressure on 'em, see. So naturally they knocked it down and passed the laws. You get pinched now in Hong Kong. They got about 40 or 50 guys, American nationals, doin' time there.

I got pinched in New York once for possession. I did 22 months on Riker's Island, 1949. I was with a broad who got nailed but I was with her and I took the fuckin' rap. The Feds nailed me. They thought I was an operator bringin' H. in. You know, the finger was on me. Anyway they found out it was bunker hill, the bullshits, so they turned me over to the City. They found out they were chasin' a wing and a prayer, just pullin' a leg. In the meantime they had 2 ounces of shit. We paid a hundred and a quarter for an ounce and then added sugar because it was too strong. We were only sniffin' it. We weren't shootin' the fuckin' shit; but there was 2 ounces and anything over an ounce was a felony. They passed that law in '49 when shmeck first hit the papers with the kids and all that shit. Well I got in under that. But it was my first offence, and they allowed me to plea to a misdemeanor and I got pen. indef.

The broad took the cure with Dr. Gilbert Grossman on 51st and First Avenue. At one time you could go to him for a hundred. You told him how much shit you were usin' and all. He'd shoot ya full o' methadone plus vitamins once a day for about 10 days and give ya a perscription for a coupla pills to sleep on. Fuck, ya just backed away. And I know some guys had some bad fuckin' habits, smokin' habit and mainline habit. But Dr. Grossman was doin' a noble thing and they didn't want that. They want everybody on the fuckin' pad, or pinched, or a record of it. It shouldn't be that way. If a man is fucked up why can't he go to a doctor? That's what they should do here, have a doctor for the guys that want ta go. Let them back away themselves without comin' here to the detox ward. This is a 1700 on MediCal. For 7 days, 1700 bucks!

But your fuckin' narcotic and city officials want to handle it because of the fuckin' payroll. The fuckin' narco bulls are gettin' $400 a week. At one time nobody wanted to be a narco bull. But now the prestige, they're big. It's just like the Secret Service or the F.B.I. Nobody wants to be a security bull, a policeman. He's just a door shaker. . . .

Last few years I been in Singapore, in India and all. I thought I'd make it over there. But everybody rips ya off now unless you know somebody. If you have a connection then you move in with them. They take care of you. But if you're a total stranger, it's hard. You know, everybody wants a piece of ya. They bunko ya, steal ya, rip ya off, burn ya. Last year I went to Goa. A guy told me, go over there, the food is good, and everything. But that was 6 or seven years ago. The last 2 years they ran all the Portuguese out of Goa and the Indians took over. There's nothing now. Nothin' but misery and starvation. They're just all living hand to mouth.

I spent a week in Bombay first. I knew a kid, Tony, an Indian, who was born in Calcutta. His father was an Englishman. He was my connection. He got me a piece for 60 dollars, pure, and we went down there and we laid on a Portuguese military reservation. It was a barracks compound. It's all rundown but they still use the buildings. It's a house; a square, a building with a porch, for 2 dollars a day. It was nice but for the fuckin' food. Everything is dehydrated, dirty, filthy. There's no refrigeration. The eggs are tubercular. I ate them and I was burping. And Tony told me, "Don't eat those eggs, they're tubercular." They didn't have no paper bags like here. Newspapers. They wrap the toast up in the newspaper and that's the way you get it. Well, that newspaper might've been lying in the shithouse and some dog pissed on it and you're eating off it.

Anyway, I don't know if I got cholera or dysentery. But I puked and shit and they flew me back to Bombay. I went to Kennedy Hospital and laid there for 10 days until I finally come out of it. I spent 3 or 4 days in Bombay. I was payin' 5 dollars a day for a fuckin' room, shit house in the hallway – no sink, just a bed. It was only about 2 blocks from the main hotel, the Timor Hall, the "Gateway To India." But everyone is crippled, begging. There's nothing but poverty, disease, filth and shit. Even the middle class is having a problem. Everything is old fashioned, antique. Another thing, they got a bunch of hippies from England, France, Germany, and the U.S. They're all over there. They probably got a remittance. They got money. They sit around and smoke, maybe hash. And they got some kind of fuckin' drive goin on; peace on earth or fuckin' democracy, utopia. Well, like I say, they're all layin' there. They panhandle. They go to the fancy hotels. Who'd turn a guy down for a half a buck if he was an American? And that's how they get by, maybe sell their passports.

Well, I got tired of it so I talked to a guy at the Seaman's Institute, Bombay, a priest. I told him, look, I been fuckin' up around here. I'm strung out. I'm going back to the States and I wanna get cleaned up, go on methadone. He told me

where to go in England. But when I got to Paris I heard they wouldn't do nothing for you in England. You got to be a British subject. I caught the next fuckin' plane to New York.

When I come into New York I was fuckin' sick. Immigration got them a big book and if you got a narco beef they got a mark. You can't see it. It's all in code, secret. But then they give you a slip and there's a space on it. If they hit the stamp above the space that means you got heat. Then they pull ya over and say, "We're narcotics." They take you in a room and strip you and shake you and look for something. But I broke my works up on the plane.

After that I went over to Jersey. Stayed with my sister. Then I went to Vegas. I got some friends down there working in the Bartenders. Then I came to Frisco, 'cause Frisco is my home town. I got a place, a hotel. And I got credit.

I had a little bankroll and I know 1 or 2 who are gettin' some Mexican shit. I use Mexican sometimes. It settles when you're cookin' it – like there's cocoa on the bottom. That's the fuckin' shit that ain't doin' you a bit of good. It's gonna affect your bloodstream, or your system, or kidneys, or your liver. The stiff they cut the shit with, that's what's fuckin' you up. I just don't see the stuff like we had in the 30's. It had to have a kick or you couldn't get rid of it.

My friends are all gone. I had friends in Italy, you know, deportees and acquaintances. And in Singapore, in Hong Kong, the Phillipines . . . during the war and after the war. But fuck, it's all changed. Even San Francisco where I hung out – Mason Street is knocked down. Now they got the Hilton. Everybody's gone – disappeared. What few are there are in their seventies. They're fuckin' senile, you know, ding-bat. So I got to live alone. I can't hob-nob with them cats. I'm not their bag. I'm not your bag. You're not mine. The only thing I can do is school ya. And there's nothin' to be ashamed of. It's better that way. I want people to know.

I can go to Alaska and go to work on the pipe line up there. I got a friend of mine up there. But it's too fuckin' cold. I'm not gonna go. I got Social Security pension comin' – $228 a month. Maybe I'll ship out again, I don't know. I wanna retire and go some fuckin' place. I lived with four broads but now I want to live alone. I'm trying to reach a happy medium. I've done everything. I've seen everything. I've won and lost and there's no fucking thing for me to pursue anymore.

Maybe I'll go up to Santa Rosa when I get outa here. The Union has a bunch of old timers up there, pensioners. For 125 dollars they get a place to eat and sleep. A cabin. But all them guys are 70 or 80, 90, broken down, grouchy. They're full of "fours." They're all hopping around on canes whacking each other. That's no place for me. If I was studious, if I was a fuckin' intellectual ..... but I can't read a book. Fifteen minutes, my mind wanders off. Hobbies, painting, that ain't for me. I'm a different type of fabric or timber. I can't be a loner. I don't care to hunt. I don't know how to fish, so that's out. So the only thing I can do is sit around my own rendezvous with my own crowd on the waterfront. But it's not to be had because all my guys are gone. The younger generation, they live in Pittsburg, Half Moon Bay, Redwood City.

If I fall when I get out, I'm gonna take my pension and go back to Singapore. Get the shit and go from there. Come what may, if I wind up hittin' a fuckin' rock, go to the fuckin' gallows or get pinched, I got to perish here or over there. But I wanna go the way I wanna go . . .

Benny called us a couple of weeks later. He was out of the detox ward and back on heroin. We arranged to meet at the Harbor Bar the next evening. When we got there the bartender told us Benny was sorry he couldn't make it but he had caught a ship that afternoon. The ship's first port of call was Singapore. ■

Obeying Chögyam Trungpa

BY WILLIAM S. BURROUGHS

Last summer in Boulder I was talking to Chögyam Trungpa Rinpoche about doing a retreat at his Vermont center. I asked about taking along a typewriter. He objected that this would defeat the whole purpose of a retreat, like a carpenter takes along his tools – and I see we have a very different purpose in mind. That he could make the carpenter comparison shows where the difference lies: the difference being, with all due respect for the trade of Jesus Christ, that a carpenter can always carpenter, while a writer has to take it when it comes and a glimpse once lost may never come again, like Coleridge's Kubla Khan. Writers don't write, they read and transcribe. They are only allowed access to the books at certain arbitrary times. They have to make the most of these occasions. Furthermore I am more concerned with writing than I am with any sort of enlightenment, which is often an ever-retreating mirage like the fully analyzed or fully liberated person. I use meditation to get material for writing. I am not concerned with some abstract nirvana. It is exactly the visions and fireworks that are useful for me, exactly what all the masters tell us we should pay as little attention to as possible. Telepathy, journeys out of the body – these manifestations, according to Trungpa, are mere distractions. Exactly. Distraction: fun, like hang-gliding or surfboarding or skin diving. So why not have fun? I sense an underlying dogma here to which I am not willing to submit. The purposes of a Boddhisattva and an artist are different and perhaps not reconcilable. *Show me a good Buddhist novelist.* When Huxley got Buddhism, he stopped writing novels and wrote Buddhist tracts. Meditation, astral travel, telepathy, are all means to an end for the novelist. I even got copy out of scientology. It's a question of emphasis. Any writer who does not consider his writing the most important thing he does, who does not consider writing his only salvation, I – "I trust him little in the commerce of the soul." As the French say: *pas serieux.*

I was willing to concede the typewriter, but I certainly would not concede pen and paper. A good percentage of my characters and sets come from dreams, and if you don't write a dream, in many cases, you forget it. The actual brain trace of dream memory differs from that of waking memory. I have frequently had the experience of waking from a dream, going over it a number of times, and then forgetting it completely. So during the retreat I kept pen and paper by my bed, and lit a candle and wrote my dreams down when they occurred. As it happens, I got a new episode for the book I am currently writing and solved a problem of structure in a dream recorded in these diaries. I also attempted some journeys out of the body to visit specific people, with results that, while not conclusive (they rarely are), were at least interesting and fruitful. In short, I feel that I get further out through writing than I would through any meditation system. And so far as any system goes, I prefer the open-ended, dangerous and unpredictable universe of Don Juan to the closed, predictable karma universe of the Buddhists. Indeed existence *is* the cause of suffering, and suffering may be good copy. Don Juan says he is an impeccable warrior and not a master; anyone who is looking for a master should look elsewhere. *I am not looking for a master*; I am looking for the *books*. In dreams I sometimes find the books where it is written and I may bring back a few phrases that unwind like a scroll. Then I write as fast as I can type, because I am reading, not writing.

I will endeavor to summarize the highly complex and sophisticated system of spiritual training outlined by Don Juan in **Tales of Power**. The aim of this training is to produce an impeccable warrior – that is, a being who is at all times completely in possession of himself. The warrior is concerned only with expressing the totality of himself, not with praise or support from others. He neither seeks nor admits a master. The warrior's state is achieved with the aid of a teacher and a benefactor. To understand the respective roles of teacher and benefactor, one must consider the concepts of the *tonal* and the *nagual*, which are basic to the warrior's path. The *tonal* is the sum of any individual's per-

One night, during the summer of 1974, the faculty of the Buddhist-inspired Naropa Institute's Kerouac School of Disembodied Poetics met in Colloquium. Present were Chögyam Trungpa, Rinpoche, Tibetan meditation master, poet, and founder of the Institute, William Burroughs, Anne Waldman, Allen Ginsberg, Philip Whalen, and W.S. Merwin. The question of the relationship between writing and meditation practice came up, and Trungpa, Rinpoche invited Burroughs (author of **Junkie**, **Naked Lunch**, **The Job**, *etc.) to spend two weeks in one of the retreat cabins at Karme Choling (formerly Tail of the Tiger) a contemplative Buddhist community in Barnet, Vermont. That discussion appears in* **LOKA 2, A Journal From Naropa Institute**, *published by Anchor/Doubleday, and edited by Rick Fields.*

What you see here is Burrough's introduction to the literary result of his retreat, **The Retreat Diaries**, *originally published in an edition of 2000 by The City Moon, and edited by James Grauerholz. It contains the diaries, photographs, and additional material by Grauerholz and Allen Ginsberg. As we went to press Grauerholz sent* **CQ** *a response to Burroughs by Jonas Mekas, the New York film critic.*

–Rick Fields

The Retreat Diaries
The City Moon
Box 842, Canal St. Station
New York, New York 10013
$2.50, plus $ .35 postage

LOKA 2, A Journal From Naropa Institute
from your local bookstore or
Naropa Institute
1111 Pearl Street
Boulder, Colorado 80302
$4.95, plus $ .35 postage.

Alan Rabold

William Burroughs and Chögyam Trungpa, Rinpoche

ceptions and knowledge, everything he can talk about and explain, including his own physical being. The *nagual* is everything outside the *tonal*: the inexplicable, the unpredictable, the unknown. The *nagual* is everything that cannot be talked about or explained, but only witnessed. The sudden irruption of the *nagual* into the *tonal* can be lethal unless the student is carefully prepared. The teacher's role is to clean up and strengthen the *tonal*, so that the student is able to deal with the *nagual* which the benefactor will then demonstrate. The teacher and the benefactor show the student how to reach the unknown, but they cannot predict what will happen when he does reach the *nagual*. The *nagual* is by its nature unpredictable, and the whole training is extremely dangerous. While the *tonal*, the totality of conscious existence, shapes the individual being, the *tonal* is in turn shaped by the *nagual*, by everything it is not, which surrounds it like a mold. The *tonal* tends to shut out and deny the *nagual*, which takes over completely in the moment of death. If we see the *nagual* as the unknown, the unpredictable and unexplainable, the role of the artist is to make contact with the *nagual* and bring a part of it back into the *tonal* in paint or words, sculpture, film, or music. The *nagual* is also the area of so-called psychic phenomena which the Buddhists consider as distractions from the way of enlightenment. Buddhism and the teachings of Don Juan are simply not directed towards the same goals. Don Juan does not offer any final solution or enlightenment. Neither does the artist.

During the retreat I wrote down dreams and the elaboration of dreams that takes place spontaneously in the waking state. I used an exercise in association: take a walk and later write down what you were thinking when a deer crossed the road or when you sat down on a rock and killed a biting fly. One of my first acts in my retreat hut was to improvise a fly swatter from an old whisk broom, and I think this no-killing obsession is nonsense. Where do you draw the line? Mosquitoes? Biting flies? Lice? Venomous insects? I'd rather kill a brown recluse spider than get bitten by one. And I will not coexist with flies. Interesting point here: The Miracle of the Centipede which disappeared as I was about to kill it with a sledge hammer. That was a nice miracle. *Chapeau*, Trungpa Rinpoche. Because that centipede was only half an inch long, and they don't get much bigger in that climate. And that's a bearable size – doesn't keep me awake knowing it is in the room, so why kill it? On the other hand, a centipede three inches long is already an abomination in my eyes. Little spider in web at window. He's all right. But I hear a rustling on the shelf above my bed. I light the candle and there is a spider about an inch across and a brown spider at that. Might be a brown recluse. Any case, too big to live in my vicinity. I feel better after it is dead, knowing it can't get on my face while I am sleeping.

The Retreat Diaries are not a sequential presentation. By sequential presentation, I mean Monday with all dreams and occurrences noted, then on to Tuesday and so forth. Here Thursday and Friday may be cut in with Monday, or the elaboration of a dream cut in with the dream itself in a grid of past present and future. Like the last words of Dutch Schultz. Some of Dutch's associations cannot be traced or even guessed at. Others quite clearly derive from the known events of his life. The *structure* is that a man is *seeing a film* composed of past present and future, dream and fantasy, a film which the reader cannot see directly but only infer through the words. This is the structure of these diaries.

To start with dream August 9th, 1975 . . . "WORDS" Perhaps women *are* words, and as Brion Gysin says, the first words were "Hello." When God anesthetized Adam and made Eve out of his rib and he comes around, Eve says, "Hello Adam." Recall when Pat Garrett had surrounded a cabin where Billy the Kid, Charlie Browder and a few others were holed up. Charlie had just stepped outside to piss and caught a .30-.30 through his guts which knocked him back into the cabin and Billy shoved him out with a gun in his hand. "Try and kill one of them before you die." Charlie starts staggering towards Garrett, pissing in his pants, spitting blood, dead on his feet without strength to lift the gun, so Garrett holds his fire. He gets right in front of Garrett and says "I wish . . . I wish . . . " and collapses hugging Garrett's knees and Garrett says quietly, "Hello Charlie."

Death is a word. Now fairy stone was an old remedy for sunburn, and they say it's hot on the planet Venus. Words can also serve as cover. Words are a painkiller, like junk. And here is dream about Doctor Dent, who cured me of the junk habit with apo-morphine treatment.

[more →]

One of the retreat cabins at Karmê-Chöling, Vermont, like the one where Burroughs spent two weeks.

Charlie starts staggering towards Garrett, pissing in his pants, spitting blood, dead on his feet without strength to lift the gun, so Garrett holds his fire. He gets right in front of Garrett and says, "I wish . . . I wish . . ." and collapses hugging Garrett's knees and Garrett says quietly, "Hello Charlie."

The Diaries consist of bits of dreams and poetry and associations cut in together; I can't cover every association, just give a few examples. I was thinking about Bradbury Robinson, an English friend who was then going in for mystical Christianity, when a deer crossed the road. Spanish subtitle on the film **Rashomon**. The woodcutter had deceived the police and stolen a ring. And some spaced-out Buddhist has put the fire extinguisher *under* the Coleman stove. I can see burning fluid falling in a sheet of flame while somebody tries to reach the extinguisher. Move the extinguisher to a better place.

Now to contact Campbell Dalglish by the method outlined in Monroe's **Journeys Out of the Body**. His instructions are to visit a place and not a person. That is, you concentrate on where the person is. Now Campbell lives in a house outside Conifer, Colorado and he works in Denver. So in the dream I am on Wyoming Street and find I am in the wrong house, since my house is on *Denver* Street. Someone else I tried to contact some days later was John D.C., who was later – much later – at Little America in Wyoming and sent me a post card. Point is, this out-of-body visiting is not a sequential matter. There is no time outside the body, or rather, past present and future merge. So don't expect a simple one-to-one visit; it doesn't always work that way. On August 7th I set out to contact my son Bill in Santa Cruz, California. Dream about Madrid. Now years ago in Tangier I had dream that I was standing with Bill on the coast and saw an explosion in the distance, and said, "There goes Madrid." Also Santa Cruz is Spanish name and California used to be Spanish. And a sort of fast-moving agent story emerged from this dream.

Contact James Grauerholz. Lumbago helped by his back exercises. Contact came later and indirectly. James had related a dream to me about a fundamentalist sect and meeting a young boy who said, "Shall we camel?" (The dream is quoted in an appendix.) This boy then slots into this dream via a friend named Camel, and this is the episode which showed me how the pirate story I was working on could fit into *Cities of the Red Night*, at precisely the point where the excerpt published in **ARCADE** is in the manuscript. And it was James who selected that excerpt, and sent it in to **ARCADE** during the retreat.

Someone has written on a piece of cardboard in the woodshed: "How can I please myself when I have no self to please?" Sorry, young man, I think you are kidding yourself. As long as you talk to yourself, you have a self. The self is like a pimping blackmailing chauffeur who gets you from here to there on word lines.

"Maya am I? You don't get rid of me that easy."

I have always felt that the essence of self is *words*, the internal dialogue. Trungpa agreed, with reservations, but does not give the matter of words such basic importance as I do. Don Juan, on the other hand, says that suspending the internal dialogue is the crucial step out of a preconceived idea of self. **Tales of Power**, p. 22: "To change our idea of the world is the crux of sorcery. And stopping the internal dialogue is the only way to accomplish it." The exercise he recommends to stop the internal dialogue is to walk with the eyes slightly crossed, covering a 180-degree area, without focussing on anything. This floods out the internal dialogue. Unfortunately I had not read **Tales of Power** at the time of my retreat and have had no opportunity to perform this exercise, it is not really practical in a city, owing to the constant barrage of word and image.

Some years ago I put a question to CONTROL, a mysterious computer in London which purports to be from Venus and will answer any question.

Question: Would rubbing out the word result in immediate exteriorization from the body?

Answer: Yes.

Question: How can this be accomplished?

Answer: At first automatic exercise.

I took this to mean that once the words talk on their own, they rub themselves out.

[more➔]

As a writer I deal with words. The more characters and sets develop on their own, the more valid they are for artistic purposes. If I was reading and not writing I would literally be out of my body and into my sets and characters, like the painter who bowed three times and disappeared into his painting.

A basic mutation in consciousness is necessary. No patchwork will do the job. Nobody sitting in his body is egoless. What is the nature of this drastic step into the unknown? As Korzybski said, "I don't know. Let's see." This is the Space Age. Space is a dangerous and unmapped area. It is necessary to travel. It is not necessary to live. ■

Comment from Jonas Mekas

Dear William S. Burroughs:

Re: The Retreat Diaries.

The Text:

. . . . *"I asked about taking along a typewriter. He objected that this would defeat the whole purpose of a retreat, like a carpenter takes along his tools — and I see we have a very different purpose in mind. That he could make the comparison shows where the difference lies: the difference being, with all due respect for the trade of Jesus Christ, that a carpenter can always carpenter, while a writer has to take it when it comes and a glimpse once lost may never come again,"*

With no criticism intended re: Rinpoche, only some memories: Rinpoche not only seems not to care about writing: he equally doesn't care about the work of a carpenter, whom he nevertheless uses to put down the writer. He doesn't speak about a poet carpenter but about a mechanical carpenter (who corresponds to a commercial writer). Where I come from, where I grew up, and it's quite far from here, true carpentry is as private and personal an occupation as that of a writer. There was in my village, when I was a boy, a carpenter who always carried his tools along, in a bag, the very basic tools, and he travelled from village to village, like a poet, and was known as a great carpenter, and he always carried his tools with him in order not to miss an inspiring occasion, in order "to take it as it comes," exactly as a writer, poet does. He was a great, mysterious character, and he had fits of epilepsy occasionally, and our mother used to send us children to search and catch a mole — you have to try sometime to catch a mole to know how difficult it is — because the blood of a mole is good against epilepsy.

And yes, also there was a tailor who did the same, and he also was a poet of tailoring, and he always travelled with his needle and scissors and a sewing machine on his back and did great work and it would have been silly and almost sacrilegious to ask him to leave his tools behind him.

There was also this very funny and great Bishop, Valancius, in a town in Lithuania, middle of nineteenth century, and he wrote a very funny and great book about a travelling tailor who always carried his tools along with him, and he presented him as one would present Rimbaud or Kerouac or Corso, and I read the book many times when I was a child, and that travelling tailor, his life style and everything, inspired me too to become a poet, like him, like Butku Juze, that was his name. . . .

So I think it was unfair for Rinpoche to make his comparison and then to pull you into counterpointing the work of a writer to that of a carpenter — while in truth the work of a writer doesn't differ at all from that of a true, "non-commercial" carpenter, poet carpenter. So I thought I should pass these memories to you, in defense of the carpenters of my childhood. . .

With best regards,

Jonas Mekas
New York City

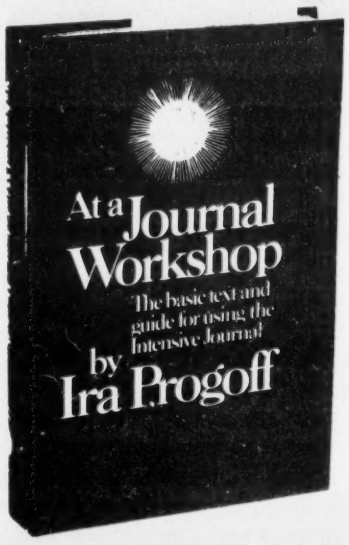
At a Journal Workshop

The best self-therapy book I've seen. Self-discovery, really. Dr. Progoff draws on 20 years' experience with psychological workbooks in leading you through a series of written exercises corresponding to the different sections of the "intensive journal" he suggests you begin: guided imagery, a dream log, dialogues with persons, with groups, with your body, with inner wisdom, etc. My own experiences with the exercises were deep and surprising. Progoff's method is remarkably non-dogmatic and has been adopted by artists, writers, philosophers, psychiatrists, mystics, psychologists, and various religious types.

When people asked Anaïs Nin how to keep a diary, she referred them to this book.

—Tom Ferguson

At a Journal Workshop
(The Basic Text and Guide
For Using the Intensive Journal)
Ira Progoff
1975; 320 pp.
$12.50 postpaid
from:
Dialogue House Library
45 West Tenth Street
New York, NY 10011
or Whole Earth



We find that we are now able to give spontaneous answers to the question of what is this present period in my life? What events mark it off? How far back does it reach?

What have been the main characteristics of this recent period?

Perhaps this recent period began when you had an idea for a new project. Or perhaps it began when you married, or had a child, or had a rift in your marriage relationship. Perhaps it has been a time of hard work, or a time of confusion, or a time of waiting.

•

Our eyes are closed and we feel the presence of the wisdom figure with whom we wish to enter into dialogue. We feel their presence, but we do not think of them with conscious thoughts. We let our thoughts come to rest. Our breathing is slow. It becomes slower, softer. We are still.

In the stillness we feel the presence of this person, this wisdom figure, this being.

Journal

For taking yourself and your thoughts seriously you can go with a spiral-bound notebook or you can go classy. I can see argument for classy. It might make you write and think more carefully. Here's the best we've seen so far — 190 pages, narrow-ruled, nice leathery cover, no frills.

—SB

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5-1/2" X 8"
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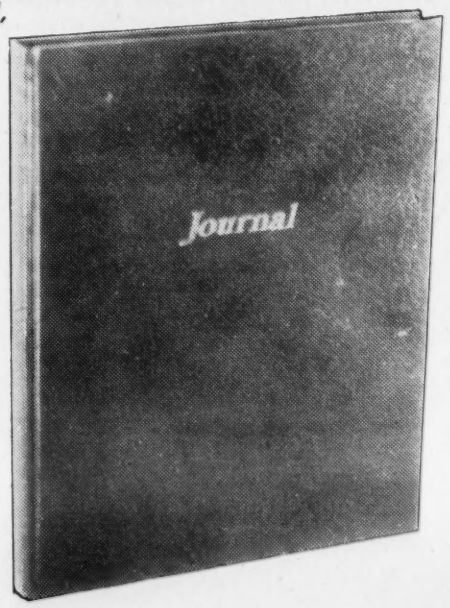


Castaneda's Journey

Despite the immense popularity of Carlos Castaneda's remarkable conversations with the Yaqui seer don Juan, an overwhelming and fundamental mystery persists. Did the conversations actually take place? Is the story true? To answer these questions, Richard De Mille, author of the wonderful **Put Your Mother on the Ceiling**, *offers a detailed examination of the don Juan books and their author.*

De Mille has scrutinized every available scrap of evidence about the books; he has delved into Castaneda's background, his birthplace, his high school, his ex-wife. He has studied the folklore of the southwest, the trickster's myths, the language of the Yaqui, the translations from Spanish in each volume and much more. He has done a job of digging and delving that would make a scholar proud and a journalist envious.

Unfortunately, he never talked to Castaneda, nor did he get satisfactory information from the men who approved Castaneda's Ph.D. in Anthropology — leaving us cut off from either final answers or Castaneda's side of the story. It's as if at the end of a detective novel, when the master sleuth calls out his clues, the murderer has another appointment and isn't in the room. De Mille vents his frustration with a series of wry, witty and unnecessary insults which lower the quality of the book.

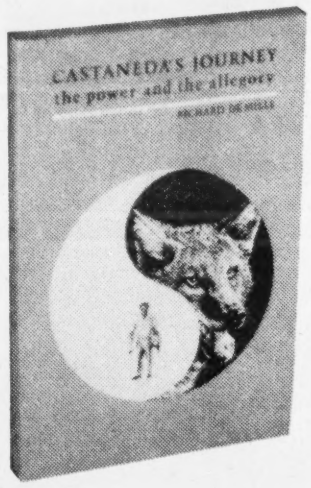
Did it all really happen? Are the books reconstituted from the field notes of an ardent student of the Yaqui or is it all a pipe dream? De Mille's evidence is that it is fiction, a hoax, a fraud, a swindle. No Virginia, there is no don Juan, no don Genero, no crows, no lizards, no little smoke and no seeing. There is only the myserious author who has created another reality for us all.

Having taken his stand, De Mille proceeds to tell a series of fine stories about himself, of strange events that occurred in writing his expose, of cross-currents in the literary and academic world, of tricks and cross-tricks. He writes well and has indeed done his homework so completely that when he argues against various parts of Castaneda's books, he is totally convincing.

To the extent that De Mille has demystified us he is doing a service. He catcalls, hoots and entertains us all the way. Yet his destruction of the Castaneda allegory is not quite convincing because, as he also admits, his debunking doesn't matter: "Don Juan lives! That is his inventor's prime achievement on this earth."

—James Fadiman
Reprinted from the Bay Guardian

Castaneda's Journey: The Power and the Allegory
Richard De Mille
1976; 206 pp.
$4.95 postpaid
from:
Capra Press
631 State Street
Santa Barbara, CA 93101
or Whole Earth



Some years ago, Mandell endured an arduous post-doctoral apprenticeship under Garfinkel, whom he later recognized as his own don-Juan-in-the-mind, an academic rebel who held that social scientists found no truth in nature, but fabricated all. Mandell suspected that in making Castaneda rewrite an intended thesis three times Garfinkel had imposed his ethnographic nihilism so ruthlessly that the wily graduate student had determined to go him one better, to "outgarfinkel Garfinkel," to prepare a beautifully wrapped empty package, a bogus thesis, a fake ethnography, which would achieve continuity and a sense of reality, thereby demonstrating the student's capacity to manipulate ethnomethodologic tools, without contradicting the master's teaching that all reality in social science was manufactured by social scientists.

•

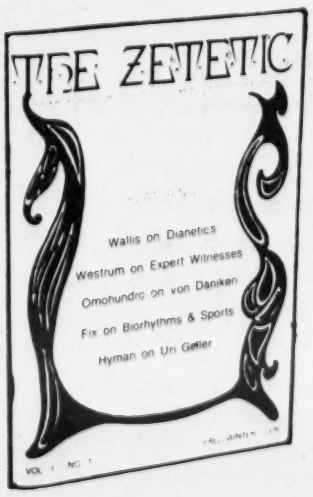
Noting with relief that Goldschmidt five years later refrained from signing Castaneda's best-selling dissertation, I am inclined to count him, like don Juan's mother, a casualty in Castaneda's allegoric Yaqui Wars. Another and more obviously innocent victim was the Library of Congress, now approaching its second decade classifying the don Juan books as Yaqui history rather than fiction. Don Indian must have "roared, kicked, cried, coughed and choked with laughter" when the Indian don told him the cataloging data in **Tales of Power** gives no birthdate for Castaneda, who surely had one, but gives a birthdate for don Juan, who surely had none.

The Zetetic

This could get interesting. It's a journal of reply to dingbat science — chariots of gods, ectoplasm, astrology, and such. The editorial board includes **Scientific American**'s *mathematician and magician Martin Gardner, who recently laid waste to Uri Geller in* **Technology Review**. *The real test of objectivity in their "Scientific Investigation of Claims of the Paranormal" will be when they confirm somebody's wild claim. Take your abominable snowman to* **The Zetetic**.

—SB

The Zetetic
Marcello Truzzi, Ed.
$10.00 postpaid
bi-annually
from:
Executive Office
The Zetetic
Box 29
Kensington Station
Buffalo, NY 14215



Subjects for this study were ten well-known professional psychics and ten Harvard and Radcliffe upperclassmen. The psychics made predictions for the year 1973 in a national weekly tabloid (**National Enquirer**, 14 January 1973). During early February 1973 predictions for 1973 were obtained from the undergraduates.

The college students were asked to imagine: "You are a well-known psychic who believes in his or her power to predict the future. You are asked by a national magazine for predictions about the coming twelve month period. . . . What events do you expect to occur? Include approximately six predictions in your forecast." . . .

None of our psychics or nonpsychics predicted significantly better than any other psychic or nonpsychic — whether we were looking at actual predictions or at predictions controlling for difficulty and professed psychic ability.

•

Were it not for the fact that Erich von Däniken has millions of otherwise intelligent people discussing his book and theories seriously, I would prefer to write a parody of his style. But I fear his readership might believe me too. I ignored his books for four years, but now I cannot teach my students or talk to my academic colleagues without his name souring my day. It is out of his hands, now, this chariot thing. It has reached the people, and for reasons that are their own they have made von Däniken a prophet (profit?) and me a defender of the Establishment.

Passages

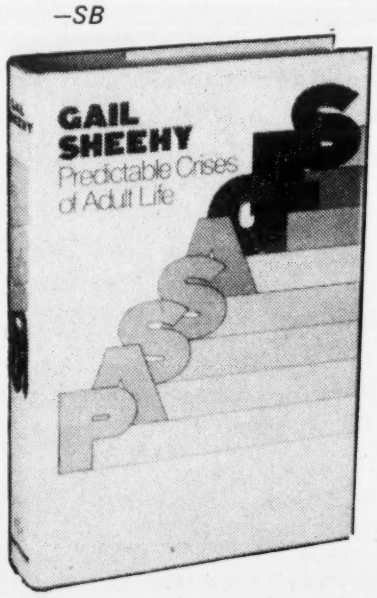
A handbook about why members of the New Class go crazy every seven years or so, and what to do about it (let go of something, move on to something). Gail Sheehy is a sharp New York (and New York*) writer, a student of Margaret Mead, and delivers a combination of flair and rigor rare in self-help best-sellers. She might help you through your next bad patch.*

—SB

Passages
(Predictable Crises
of Adult Life)
Gail Sheehy
1976; 393 pp.

$10.95 postpaid

from:
E.P. Dutton & Co., Inc.
201 Park Ave. South
New York, NY 10003
or Whole Earth



Without warning, in the middle of my thirties, I had a breakdown of nerve. It never occurred to me that while winging along in my happiest and most productive stage, all of a sudden simply staying afloat would require a massive exertion of will. Or of some power greater than will. I was talking to a young boy in Northern Ireland where I was on assignment for a magazine when a bullet blew his face off. That was how fast it all changed.

•

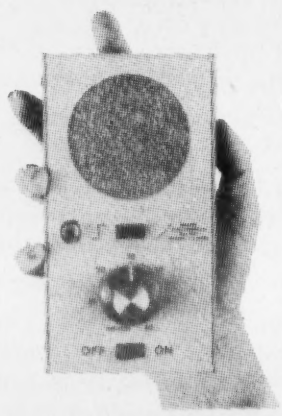
Everything that happens to us — graduations, marriage, childbirth, divorce, getting or losing a job — affects us. These *marker events* are the concrete happenings of our lives. A developmental stage, however, is not defined in terms of marker events; it is defined by changes that begin within. *The underlying impulse toward change will be there regardless* of whether or not it is manifested in or accentuated by a marker event.

Meditation timer

An electronic gizmo that has improved the quality of my life. Runs silent — no ticking — and when the time you choose is up, it lets you know with an electric tone that increases in volume so g-r-a-d-u-a-l-l-y that you feel you "just remembered" whatever it was you wanted to remember. An uncanny, startle-free sensation. Runs 120 hours on a replaceable battery, and can be set for any period between three and sixty minutes. I've used it for meditating, photography, naps, and soft-boiled eggs with good results. Now if these guys would only come out with an alarm clock.

—Tom Ferguson

Meditation Timer
$34.45 postpaid
Info free from:
Anand Electronics
Box 2868
Oakland, CA 94618



Gamesemag

Gamesemag *is a little magazine that explores the variety of play in human life. It is primarily focused on ways play can be used in school, but it has something for all people who enjoy games. Word games, math games, games that involve moving around, magic tricks and illusions drawn from throughout the world. There is a section on how to make up your own games. The magazine is a pleasant resource and should be interesting to most anyone who can read and think and play on a fairly simple level. It is not for the specialist or the expert.*

—Herb Kohl

Gamesemag
$6.00 /year
(9 issues)
$ .75 /single copy
from:
The Center for Open
Learning and Teaching
P.O. Box 9434
Berkeley, CA 94709

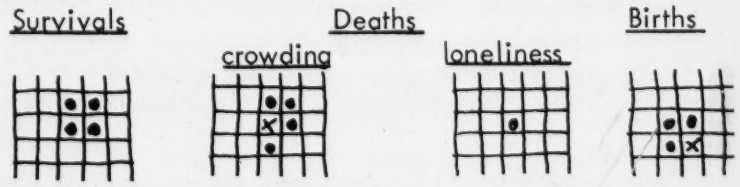
THE GAME OF LIFE

LIFE is a solitaire game that has become the obsession of many gamefreaks. It was invented by John Horton Conway who is a mathematician at the University of Cambridge, England. The game is played with counters of two colors on a grid of squares. The grid should be large, though while you are learning the game a checker or Go board will do. Checkers, Go stones, poker chips, or coins can be used as the counters. A paper and pencil version can be played on graph paper.

The game starts with any grouping of counters on squares on the board. It is best to begin with simple patterns of 2, 3, 4 or 5 counters. The game has to do with the development of your original pattern through a number of births, deaths, and survivals which are determined by a few simple rules — hence the title Life.

Here are the rules:

1. Survivals — Every counter with 2 or 3 neighboring counters survives for the next generation.
2. Deaths — Every counter with 4 or more neighbors dies of crowding and is removed from the game. A counter with one or no neighbors dies of loneliness and is also removed.
3. Births — Each empty cell on the board touching on 3 and only 3 counters is a birth cell and a new counter is placed on it.



•

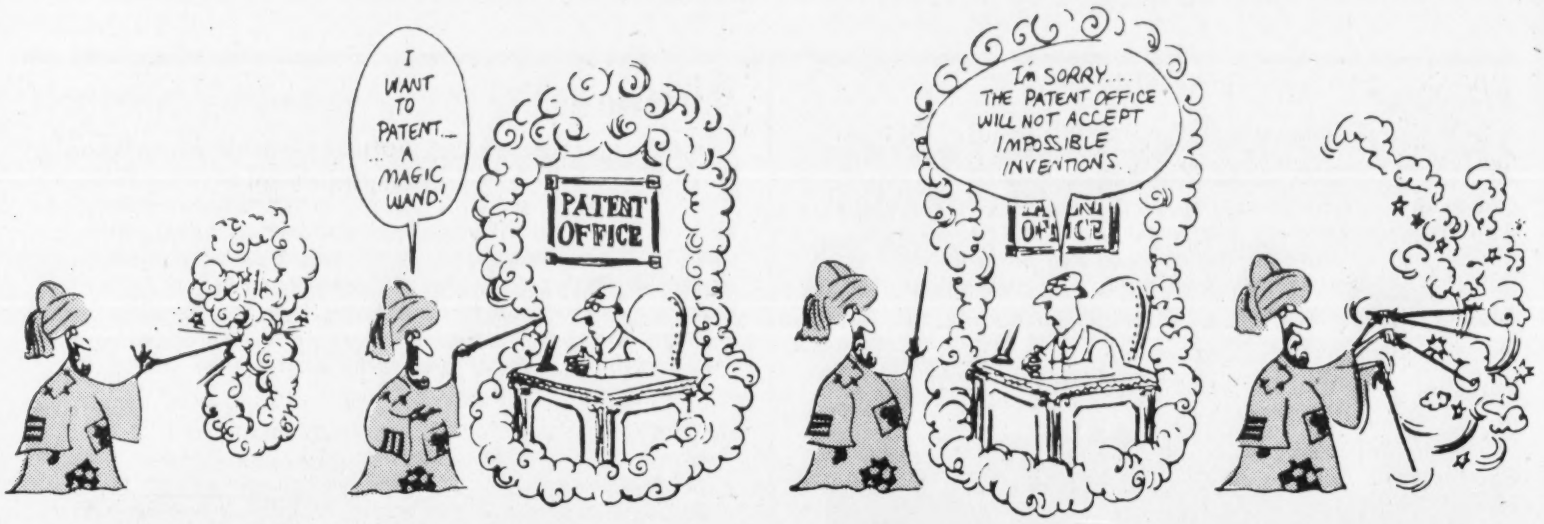
How to Sleep Better

One player completes: "One thing that keeps me from sleeping is _____."

The other, without seeing what the first has written, completes: "The way to overcome that is _____."

Example:

One thing that keeps me from sleeping is the people screaming next door. The way to overcome that is to write a poem before going to bed.



The Work of Idries Shah

BY JAMES FADIMAN

A voice whispered to me last night, "There is no such thing as a voice whispering in the night."
—*Wisdom of the Idiots*

In the ever-widening spiritual underground which is around us like a beneficent Mafia, the works of Idries Shah provide a relief to the tedium of important and earth-shattering mindfullness. Shah's books are delightful. I have given them as gifts to friends who cared not a fig for profundity, to people who only read occasionally, to people resting in a hospital as well as people who wanted some way out of their current dead-ended life space.

What is Shah up to and what is behind the 17 books he has put out? Obviously, he wants people to become acquainted with a broad sweep of thought from the Sufi tradition in a way that is current and useful.

His books on Sufi thought invite, invoke and envelope the reader. Let me give you a guide tour through them to let you see what I'm talking about.

Let's begin with three collections of stories about the Everyman of the Arab world — Mulla Nasrudin. In these stories, collected from a hundred sources we are introduced to the human condition, our attempts at wisdom, our assertive blindness. Though the impact can be powerful, the push is gentle so that it is easy to laugh at Nasrudin and even ourselves. The titles:

The Pleasantries of Mulla Nasrudin
The Subtleties of the Inimitable Mulla Nasrudin
The Exploits of the Incomparable Mulla Nasrudin

Here are some examples:

Urged on by Robert Ornstein of left-brain-right-brain fame, who is a cohort of Shah's, we are at last attempting an introduction to his prolific work. It is beguiling stuff and improves further with re-reading. The same goes for hearing Shah speak, which he is doing more frequently of late. Jim Fadiman, a Whole Earth reviewer since our beginnings, is head of the Institute of Noetic Sciences in Menlo Park, California. He is an old Human Potential hand.
—SB

THEY DON'T WORK

An engineer was fixing a bell outside a house. Mulla Nasrudin came by, stopped and asked: "What is that thing?"

"Fire alarm."

"I've seen them before – they don't work," said the Mulla.

"What do you mean?"

"The bell rings all right, but the fire burns just the same."

LAST YEAR'S NEST

"What are you doing in that tree, Mulla?"

"Looking for eggs."

"But those are last year's nests!"

"Well, if you were a bird, and wanted a safe place to lay, would you build a new nest, with everyone watching?"

THAT'S WHY THEY APPRECIATE IT

"Never give people anything they ask for until at least a day has passed!" said the Mulla.

"Why not, Nasrudin?"

"Experience shows that they only appreciate something when they have had the opportunity of doubting whether they will get it or not."

If you want more amusement, if you are intrigued by the tales, if you are curious about their origins, how they are used in teaching and if you want to be exposed to other aspects of the Sufi tradition there are a number of other works by Shah. Among these are both introductory books and selections from "classic" Sufi authors. These include:

The Way of the Sufi
Tales of the Dervishes
Wisdom of the Idiots
Caravan of Dreams
The Sufis

The first four hold generally to the format of the Nasrudin books; a collection of short pieces, many of them stories, some sayings, some discussions of particular themes. Unlike the Nasrudin stories, they are often serious and do not reveal themselves fully on a first reading. Try these to get the flavor:

THE ANCIENT COFFER OF NURI BEY

Nuri Bey was a reflective and respected Albanian, who had married a wife much younger than himself.

One evening when he had returned home earlier than usual, a faithful servant came to him and said:

"Your wife, our mistress, is acting suspiciously.

"She is in her apartments with a huge chest, large enough to hold a man, which belonged to your grandmother.

"It should contain only a few ancient embroideries.

"I believe that there may be now much more in it.

"She will not allow me, your oldest retainer, to look inside."

Nuri went to his wife's room, and found her sitting disconsolately beside the massive wooden box.

"Will you show me what is in the chest?" he asked.

"Because of the suspicion of a servant, or because you do not trust me?"

"Would it not be easier just to open it, without thinking about the undertones?" asked Nuri.

"I do not think it possible."

"Is it locked?"

"Yes."

"Where is the key?"

She held it up, "Dismiss the servant and I will give it to you."

The servant was dismissed. The woman handed over the key and herself withdrew, obviously troubled in mind.

Nuri Bey thought for a long time. Then he called four gardeners from his estate. Together they carried the chest by night unopened to a distant part of the grounds, and buried it.

The matter was never referred to again.

THE LOAN

A man was telling his friends in a teahouse:

"I lent someone a silver piece, and I have no witnesses. Now I am afraid that he will deny that he ever had anything from me."

The friends commiserated, but a Sufi who was sitting in the corner raised his head from his knee and said:

"Invite him here and mention in conversation, in front of these people, that you lent him twenty gold pieces."

"But I only lent him one silver piece!"

"That," said the Sufi, "is exactly what he will shout out – and everyone will hear him. You did want witnesses, did you not?"

CONTAINMENT

A dervish traveller recounts:

I visited a certain shiekh who was a magnet for people of the most miscellaneous character.

I said:

"How can you bear the company of such dreadful people! They have neither been improved by their proximity to you, nor were they attracted to you in the first place by your virtues, for by their own confession they seek only powers not possessed by other men."

He said, and I shall never forget it:

"Friend, if all the snakes in the world were to be about their business of killing, and none was to be diverted by vain hopes which prevented his evil from being exercised, there would not be a single human being left alive."

The Sufis. The first available book by Shah on Sufism is an apparently conventional book. Looked at closely it is a combination of ideas, facts, data, and writing styles which become a series of exercises for the reader as well as a source of content. It is a description of the basic Sufi ideas, the most important Sufi thinkers and writers, an introduction to Nasrudin, the special uses of language and exercises in Sufi teaching as well as a fund of information reflecting the influence of Sufi thought on Western European philosophy and religion over the past thousand years. When I first read it I was intrigued by the connections between Sufi teachings and the works of Chaucer, Free Masonry, the Rosicrucians, Roger Bacon, St. Francis, and other Europeans. The book is a source of information, it is also a sample of the way in which Sufi material can be taught; each chapter has a deliberate interior rhythm which is aligned with the particular kind of information in it.

Should you wish to look instead at those ideas more immediately and obviously related to current concerns the following Shah titles would be your choice:

The Dermis Probe
Thinkers of the East
The Magic Monastery
Reflections

Here are a few selections from these books:

From **Thinkers of the East**:

MOTIVATION

A woman was sitting by the roadside, weeping most bitterly at the grave of her daughter. She was the object of sympathy and concern to everyone who saw her. Yet Sheikh Attar observes that those who sympathized with her were themselves in a worse case.

The other woman, as a wayfarer points out, unlike a thousand other people around, at least knew the cause of her grief and the object from which she had been separated.

Man is in a similar condition of estrangement – as it were from his family – but does not know it. All he knows is that he is unhappy, and he has to invent reasons to which he then attributes his misery.

INCONSISTENCIES

A rare writing by Rafik explains the purposeful reality behind outward inconsistency.

"Note well," he says, "the people who express surprise at the inconsistencies which they find in dervish speech and action.

"Such people have not yet realized that the Path is followed by effective means, not by 'sameness.'

"If you find the externals and procedures of any Tekkia identical with any other, know that one of them at least is an imitation.

"The dervish who can only say the same thing to everyone at all times is not a teacher, Felicitous One!

"Children always like the things which are always the same.

"Those who prize and understand rarities seek uniqueness, do they not? – they do not seek sameness, but rather the reverse.

"Yet the shallow literalist acts and thinks like an undiscriminating infant. Except that he insists upon being treated not as an infant but as a connoisseur."

[more →]

From **The Dermis Probe**:

THE MAGIC WAND

The three Wisest Men of the Land of Fools, by some lucky chance, met Khidr, walking the Earth trying to impart wisdom.

"Would you like to know the Word whereby everything can be accomplished?" he asked them.

"Yes, indeed," said the Three Wise Men.

Khidr said:

"Are you ready to hear it?"

"Yes, indeed," said they.

So Khidr told them the Word.

The First Wise Man said:

"But this is a word which anyone could pronounce – this cannot be of any use," so he promptly forgot it.

The Second Wise Man said:

"This word is too inelegant for me," and he found that he could not remember it.

The Third Wise Man said:

"It can be written down – so it cannot be of any use. It does not sound like what I expected – so it is not the right kind of Magic Word."

Then they all noticed that a deputation of ordinary citizens of the Land of Fools was waiting to hear some of their wisdom, so they hurried off to fulfill their obligations.

From **The Magic Monastery**:

MONEY

There is a story about a man who went to a dictionary compiler and asked him why he was interested in money. The lexicographer was quite surprised and said, "Wherever did you get that idea?"

"From your own writings," said the visitor.

"But I have only written that one dictionary – that is my writing," said the author. "I know, and that is the book which I have read," said the other man.

"But the book contains a hundred thousand words! And of those, I don't suppose that more than twenty or thirty are about money."

"What are you talking about the other words for," said the visitor, "when I was asking you about the words for money?"

From **Reflections**:

SAYING A THING

It is not important to have said a thing first, or best – or even most interestingly. What is important is to say it on the right occasion.

READING A BOOK

People say that they want to learn, but if they don't know how and don't want to learn how, nobody can do much more than inform them of the facts.

Remember the man who, told to read a book, said: "No, I tried that once and it didn't work."

No review would be complete without mentioning **The Book of The Book**, the only one listed here which is not available in paperback. It is a surprising book and one which made me genuinely angry when I first read it. To describe it more than that would be to rob you of an event in your life.

Idries Shah

In ending this tour, remember that reading about books is like reading about peaches; a good description may make your mouth water but it will satisfy neither hunger nor thirst. That Shah has presented a system of thought and the vocabulary to understand it is tour de force in itself; that he has done so in an entertaining and beguiling way is a gift. These books are a pleasure to read, a challenge to understand, and for some, a way of obtaining knowledge.

Two final comments from Shah; each can be considered a "seed thought" that you add to in considering your own experience.

> "Generosity is doing justice without requiring justice."
>
> "Call yourself unlucky only if you take up coffin-making and people stop dying." ■

ACCESS

The Wisdom of The Idiots (1971, $1.95)
The Pleasantries of Mulla Nasrudin (1972, $2.25)
The Subtleties of the Inimitable Mulla Nasrudin (1973, $1.95)
The Exploits of the Incomparable Mulla Nasrudin (1972, $1.95)
The Way of the Sufi (1970, $2.25)
Tales of the Dervishes (1970, $2.25)
The Dermis Probe (1971, $1.75)
The Magic Monastery (1972, $2.75)

All from:
E.P. Dutton & Co., Inc.
201 Park Ave. S.
New York, NY 10003

Caravan of Dreams (1972, $1.50)
Thinkers of the East (1972, $1.00)
Reflections (1972, $1.75)

All from:
Penguin Books, Inc.
7110 Ambassador Road
Baltimore, MD 21207

The Sufis (1971, $2.95)

From:
Doubleday & Co., Inc.
Garden City, NY 11530

The Book of the Book (1970)

Write for price from:
Octagon Press
14 Baker Street
London, W1M 1DA
England

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Alton, IL
Perry O. Plouff
Inkster, MI
Benjamin F. Post
Nashville, TN
Lawrence Potapoff
Bellevue, Alta., Canada
Power Bus, Uninc.
Berkeley, CA
Jerry Rephan
Fayetteville, AR
S.T. Reymiller
Piqua, OH
T. and D. Richards
Sacramento, CA
Dirk Richardson
Kalamazoo, MI
Eugene Rodriguez
St. Louis, MO
Edward Rosenfeld
New York, NY
Charles Schultz
Anacortes, WA
Peter Schwartz
Palo Alto, CA
Richard Seifert
Fairbanks, AK
John Shafer
St. Paul, MN
Gary Shaw
Aurora, OR
W. P. Sheperdson
Orleans, MA
Jerry Sievers
Vincennes, IN
Alan and Carolyn Sisson
Falmouth, MA
Donley Smith
Fairfax, CA
Roger Soder
Neah Bay, WA
Alex Spear
Pasadena, CA
Dan Spencer
Albany, NY
Karl Stalnaker
Lilburn, GA
Jeff Steinwedel
Collegeville, PA
Bill Stokes
Florence, AL
Franc and Lil Stratton
APO New York, NY
David Suchman
Gainesville, FL
Susan Swigart
Los Altos, CA
Jean C. Taupin
Pescadero, CA
Alice and John Tepper-Marlin
New York, NY
Steve Trone
Lawrence, KS
Daniel Vanarsdale
Oxnard, CA
Robert L. Walker
Aspen, CO
Mark Weaver
Des Plaines, IL
Jeff White
Portland, OR
David Whitney
San Rafael, CA
Karl Williams
Scranton, PA
Timothy Wilson
New York, NY
Jimmie Wright
Fairfax, VA
Tom Zientek
Minneapolis, MN
Michael Zola
Sacramento, CA
Paul Zukowski
Chicago, IL
and One Anonymoose

The Retaining Subscriber list includes only those who became retainers since the last issue. A glance at the financial report will show how indebted we are to our contributors.

Retaining and Sustaining Subscribers get their magazine delivered first class (airmail) for a year. Maniacal Subscribers get The CQ *for life. Each of the donation amounts (minus $8) is tax deductible.*

Help

VANITY LICENSE PLATES

CQ is planning an article on personalized license plates — the kind where you pay an extra fee and get to decide what they say. If you know the answers to any of the below, we'd like to hear from you.

Do you have a personalized license plate? What does it say? Why did you get it? How do you feel about it? Has owning it made for any weird or wonderful experiences? What interesting plates have you seen? How did personalized plates get started in your state? Who got the legislature interested in the idea? Who was for it and who was against it and why? Where did personalized plates get started nationally? What person in what state first had the idea? How do prison license plate factories work and how do the people who work in them feel about them?

DUST FREE BOOKS

We're looking for the books on the hardest working bookshelf — the books that really get used. We'll tell you about them if you'll tell us about them. What are the books you couldn't manage without?

—Anne Herbert

Financial reverses at CQ

For the first time in the history of the magazine we did not lose money last quarter. In fact we made $15,000. We'll probably go negative again for the next couple of (non-Christmas) quarters, but at least we know it isn't against a Law of Thermodynamics or something for CQ *to be in the black.*

A little analysis that Mike Young made of our subscription statistics shows what made the difference – 3,000 gift subscriptions, coming from over 1/4 of the regular subscribers. That's unheard of in this business. Who saved our ass is an unusually committed and generous population of readers.

Also we got a phone call. The voice said, "Would $25,000 help?" Suddenly self-conscious and embarrassed and happy we said, "Yes it would. May we print the name of our benefactor?" The voice said, "No particular reason to." Whole Earth has given money away, but this was the first time we've received it like that. Now we know the feeling that goes toward that financial entity called an "angel." Makes us want to be philanthropists again someday.

Angel's money will be used for a scheme to get this operation on its goddamn feet once and for all. We considered and rejected carrying advertising in the magazine – it would cost an extra $3,000/issue to do and might never make a nickel. Following our readers' advice we rejected the idea of doing another Whole Earth Catalog *– the market's surfeited by now. We were considering a* CQ *Reader of all the best articles from back issues when Charles Finberg at E.P. Dutton & Co. came through with a better idea.*

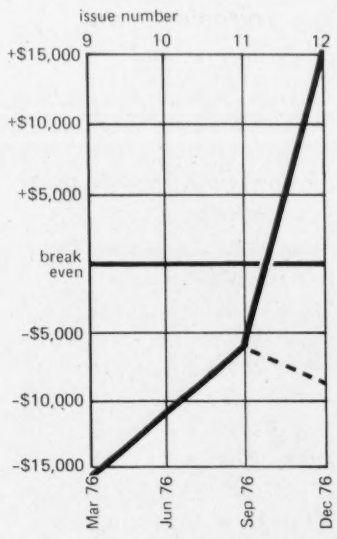
The plan is to print a series of books on specific subjects using material from the magazine – "Watersheds," "Space Colonies," "Soft Technology," "Systems," etc. We're going ahead on the books; all we need is a distributor. Obviously Dutton and Viking-Penguin (who distributes the CATALOG and EPILOG) get first consideration.

We're operating on the principle that if we persist in our folly we may become solvent. Now that the kind people who were (accurately) worried that we would go under have rescued us, we can make our appeal to the cautious people who wanted to be sure of our continuance before subscribing, or renewing, or giving CQ *to friends.*

It seems we will be around for a while.

–SB

Profit/loss per issue



Subscription history

Continuation of last issue's CQ *business graphs. The projected loss of $7,000 (dashed line) turned out to be $15,000 profit – making us feel stupid but not unhappy. As for subscriptions, we had our biggest boom ever at Christmas – 854 subs/week – which put our total subscribers somewhat higher than expected – 15,916 of you betting $8 that* CQ *business will continue to improve. If the trend maintains, you win.*

CoEvolution Quarterly – Spring '77 financial report

	Nov.,Dec.,Jan. (Predicted)	Nov.,Dec.,Jan. (Actual)	Feb.,Mar.,Apr. (Prediction)
EXPENSES			
Salaries and fees			
Office	$13,500.00	$14,894.99	$17,000.00
Production	5,000.00	4,726.26	5,130.00
Editors	9,900.00	11,130.75	11,450.00
Contributors	4,500.00	3,037.50	4,000.00
Office rental, materials, etc.	7,000.00	6,584.94	7,000.00
Phone	1,300.00	1,252.77	1,300.00
Promotion	6,630.00	7,914.01	7,410.00
Printing	16,000.00 (34,000 copies)	14,873.96 (34,000 copies)	15,500.00 (36,000 copies)
Subscription process and mail	7,000.00	8,931.47	11,000.00
Shipping	970.00	1,109.54	1,165.00
Business reply	1,000.00	1,715.00	2,000.00
Refunds	200.00	64.00	225.00
Total	$73,000.00	$76,235.19	$83,180.00
INCOME			
Subscriptions, gifts and renewals	$49,000.00	$63,984.23	$45,984.00
Retaining and Sustaining	2,000.00	3,175.00	3,000.00
Back issues	5,200.00	7,350.39	8,000.00
Distribution	9,000.00	16,968.21	10,380.00
Total	$65,200.00	$91,477.83	$67,364.00
NET PROFIT OR (LOSS)	($ 7,800.00)	$15,242.64	($15,816.00)

Gossip

I think I should give a warning to any of you males that are giving suck to babies as Kay Weiss said you could in the Summer '76 CQ. *She neglected to mention that in the process you will develop breasts and they won't go away. Her item may be of more interest to the gay community than the single fathers.*

Followers of the New Alchemists' adventures with their Ark on Prince Edward Island (see articles in Spring '76 and Winter '76 - '77 CQs*) will be interested to hear John Todd's current report. This winter was the coldest in 100 years at P.E.I. The Ark was completed in September and so had no chance to load its three heat storage systems with summer sunlight. NEVERTHELESS the Ark maintained a toasty growing season for its crops and people right through the winter, including four sunless days when there was no electricity on the island to run the blower systems. The Ark's backup woodburning furnace was never even lighted. Read about it in the new issue of* The Journal of the New Alchemists.

Another CQ *regular, Gregory Bateson, was appointed by Governor Brown this winter to the Board of Regents of The University of California — the closest thing this state has to knighthood. Bateson remarked at his first meeting with the Regents, "There is at large among our students the medieval demon named accidie — he's the one who whispers in your ear, 'It's not worth doing.' The students have lots of ideas, but they lack an underpinning of some sort which would let them feel that the universe makes sense. They don't know what entropy means, so they don't understand science. They don't know what a sacrament is, so they don't understand about religion."*

The Big-Time continues to pursue Ron Jones. His CQ *story "Take As Directed" (Spring '76) is scheduled by Norman Lear to start production as a play next month. "Winning" (Fall '76) is being worked into a screenplay by Ron and the kids who were on the basketball team in the story. His educational materials service, Zephyros, has just been written up in the* New York Times *and the* Christian Science Monitor. *And "The Acorn People," which concludes in this issue, is being made into a feature-length movie by former Viking quarterback Joe Kapp and David Averback (who was crippled by polio as a child). They plan to start shooting this summer at the original Camp Wiggin which is actually Camp Campbell in Boulder Creek, California.*

Gurney Norman ("Divine Right's Trip" in the CATALOG, "Jack and the Monster," "Ancient Creek," and "Boone" in various CQs*) has cut a record. It's a tale-teller called "Ancient Creek," $8 postpaid from JuneAppal Records, Inc., Box 743, Whitesburg, KY 41888, or from Whole Earth.*

To keep up with our increase in business the Quarterly *has been hiring. Diana Fairbanks took a well-deserved vacation and was replaced as production manager by Susan Goodrick (30), who used to schedule the madness at Francis Ford Coppola's* City of San Francisco *(now defunct). As a comics publisher at Apex Novelties Susan put out most of Robert Crumb's work, including the definitive interview she did with him in her* Apex Treasury of Underground Comics *(1975, $4.95). Rosanne Kramer, 25, won the competition for the privilege of answering* CQ*'s subscribers and complainers — among whom she is developing a following with her kindly nature and clear writing hand. Her experience as a VISTA volunteer and Haight-Ashbury barmaid is not wasted. Anne Herbert, who did "I Would Like to Write a Silence" in the last issue and "Snake" in this one, left Columbus, Ohio, just ahead of the snows and now rocks in a house-converted lifeboat in Sausalito between performing research and editorial assistance here.*

CQ *is still looking for more sources of income. Our map, postcards, and posters are doing well enough to add to. Got any ideas? We'd love to find some incredibly nifty tool, like the famous P-38 folding can opener, that we might sell fairly exclusively. Jeanne suggests a bumpersticker, "You may be co-evolving already and not even know it."*

We have seen the following on one toilet wall. "The CoEvolution Quarterly, Box 428, Sausalito, CA 94965, gives good head $8/yr."

—SB

Grassroots Distribution

In the Spring 1975 CoEvolution Quarterly we invited any of you who know of newsstands or bookstores in your area that might be interested in carrying the CQ to become one of our distributors. That invitation still stands.

For those of you who'd like to order in case lots (a case is 50 copies), we'll ship you the current edition of the CQ for $1.25 per copy. The suggested price to retailers if $1.50 per copy. We'll give you full credit for copies returned to us in saleable condition. (Please send full payment with your order.)

There is another option for small bookstores or shops that might want to carry the CQ but can't handle orders of a case lot or more. For them, our terms are these: a minimum order of 15 copies for $1.50 per copy, with no returns and with pre-payment in full. If you think your corner grocery, for example, might be interested, show them a CQ. We could sure use the exposure. If you're interested, contact me at Box 428, Sausalito, CA 94965. Phone (415) 332-1716.

—Jeanne Campbell

'Or Whole Earth'

Under the access of an item in The CQ *means you can mail order it from:*

Whole Earth Truck Store
558 Santa Cruz Ave.
Menlo Park, CA 94025

Anything else — letters, material for the magazine, subscriptions, complaints, should be sent to us here at:

The CoEvolution Quarterly
Box 428
Sausalito, CA 94965

The COEVOLUTION Quarterly

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Distribution, Promotion & Library Jeanne Campbell

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Land Use Rosemary Menninger, Peter Warshall, Richard Nilsen

Craft Diana Sloat

Medical Tom Ferguson

Personal Computers Marc Le Brun

Learning Linda Williams

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Business Advisor Andrew Fluegelman

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Hatcher Trade Press, San Carlos (cover)
Recorder Sunset Press, San Francisco (bindery)
Glue-Fold Co., Menlo Park (envelopes)
Chong Lee, San Francisco (photo prints)

Change-of-address sermonette

Lately we have begun trying to keep closer track of the actual figures involved in our functions here in the sub. office. By comparing our figures with various national averages we have discovered that our complaint rate is about AVERAGE. (In bare figures that's around 20 complaints a week on a list of 20,000.) The change of address rate, however, supported my belief that CQ must appeal to a particularly mobile crowd. Approximately 45% of all our subscribers change some part of their address each year (based on the last 2 months' observation). That's twice the national average. (Actual figures: 1550 out of 20,000.)

The best way for us to deal with this deluge is for everyone to **send us notification of any change 3 full weeks before the solstice or equinox** (our publication dates). When someone moves without notifying either the post office or us, there are as many as 12 possible steps we must take to get another magazine to the right person & place. That's a lot of handling and affords too much potential for human error . . . Heaven forbid'

If your CQ should fail to arrive or you plan to move, do let us know and please include the info on a recent label if possible. Those numbers across the top of it identify you for us, tell us where you live and how long your sub is. Example:

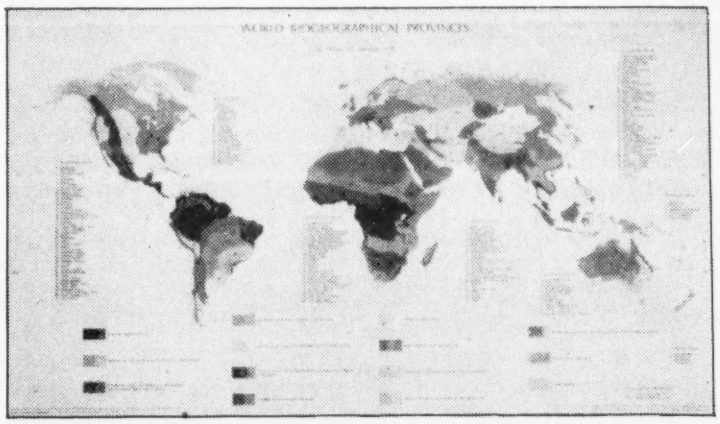
94965JOHNSJ00 6092 0912

John Johnson
1 Bridgeway
Sausalito, CA 94965

The top line is zip code, first five letters of last name and first letter of first name, miscellaneous office codes, and finally the term of the sub. (0912 means that the first issue of the sub was No. 9 — Spring '76 — and the 4th issue is No. 12 — Winter '76 - '77 — counting upward from our first issue.)

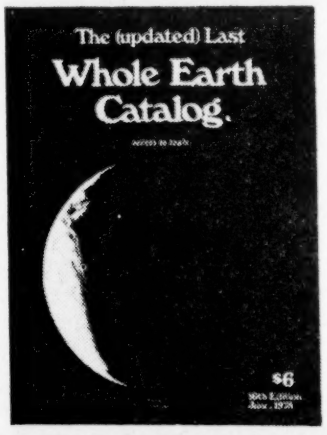
Your help will be greatly appreciated.

—Isabella Kirkland, Subscriptions



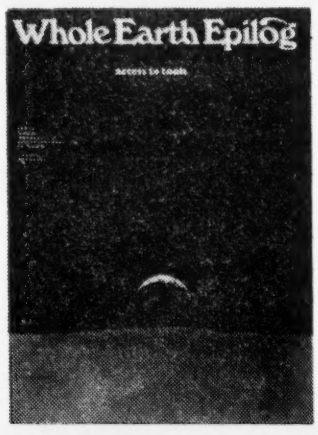
World Biogeographical Provinces Map, 22¾ x 39" – $3.00

A somewhat deeper politics is visible in the boundaries of biogeographical provinces, and human politics commonly errs by ignoring them. This map is a result of still on-going scientific research in plant and animal distribution.



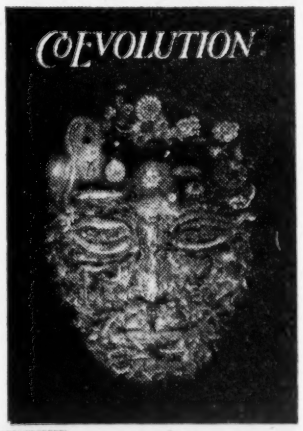
Last (updated) Whole Earth Catalog – $6.00

Winner of the 1972 National Book Award, the **LWEC** functions as an evaluation and access device. It contains reviews of books and tools in the original Whole Earth categories: whole systems, community, shelter, craft, nomadics, communications, land use and learning.

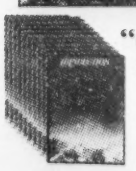


Whole Earth Epilog – $4.00

The **Epilog** is, in effect, Volume II of the **Last Whole Earth Catalog**. It begins with page 449, and contains 320 pages of all new material, cross-referenced and cross-indexed to the **Catalog**.



"CoEvolution Face"



"CoEvolution Sky"

Full-color **Poster**, 18 x 24", "Face" or "Sky" – $4.00 each

Full-color **Postcards**, "Face" or "Sky", set of 10 – $2.00

Self Order Form

We've enclosed an envelope, overleaf.

☐ 1 year CQ $8.00
☐ 2 years CQ $16.00
☐ Check if this is a renewal
☐ CQ Back Issues—$2.00 each
☐ Biogeographical Map—$3.00
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☐ Whole Earth Epilog—$4.00
☐ Last (updated) Whole Earth Catalog—$6.00

Issues: _____

(See overleaf for back issues available, and contents.)

☐ **Retaining**—
$25/year. $17 tax deductible. You get your CQ in an envelope, delivered first class, and we gratefully publish your name and town (unless you say not to). It's tax deductible because we're a non-profit corporation.

☐ **Sustaining**—
$100/year. $92 tax deductible. You get your CQ in an envelope, airmail, and we gratefully bless your name and town in the magazine (unless you say no).

☐ **Maniacal**—
$1000/year. $992 tax deductible. You get your CQ in an envelope, airmail, for the rest of your life (or ours, whichever comes first).

Please make checks payable to:
The CoEvolution Quarterly
Box 428
Sausalito, California 94965

$ _____ total enclosed

Name _____

_____

_____ Zip _____

6133

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Contents of Past Issues

(Issues No.1, Spring 1974, No.5, Spring 1975, No.6, Summer 1975, No.7, Fall 1975, and No.9, Spring 1976, are out of print.)

No. 2, Summer 1974

Setting Food By *Doris Herrick*
Ehrlich's Guide to the Apocalypse: Food
Anne H. Ehrlich and Paul R. Ehrlich
Tongue Fu *Paul Krassner*
Sanctity and Adaptation *Roy A. Rappaport*
Natural History Comes to Whole Earth
Peter Warshall
Land Banking *Huey Johnson*
Gravity Engines and the Diving Engine *Steve Baer*
Sexual Honesty *Shere Hite*
New Games Tournament *Pat Farrington*
Salons and Their Keepers *Stephanie Mills*
Notes on Provisioning a Small Boat for Extended
Cruising *Kathleen Pumphrey*
Apple Picking *Rick Fields*
Bookmaking Access *Robin Rycraft*
Making and Playing the Shakuhachi
Monty H. Levenson
Gorf *Michael McClure*
The POINT/Penguin Books Publisher-Distributor
Contract for the Whole Earth Epilog
Lawrence Klein

No. 3, Fall 1974

Edited by the Black Panther Party *Huey P. Newton,
Elaine Brown, Ericka Higgins, David DuBois*

No. 4, Winter 1974

"The whole system is out of whack" *Dale Jorgenson*
Energetics' Shortcomings *Hazel Henderson*
Enough Energy for Life & The Next Transformation
of Man *Lewis Mumford*
The Creature and its Creations *Gregory Bateson*
This Superfluity of Naughtiness *Warren McCulloch*
"Where!?" *Carl Sagan*
Winemaking at Home *Phil and Mike Palmer*
Metric System Con *Steve Baer*
Man-Made Planets, Seriously *Graham Chedd*
A Canadian Home, 1973 *Robert Frank*
Lunaception *Louise Lacey*
Preventive Dentistry Primitive Style: A Case History
Walter W. Fingar and Stephen A. Ross
Rich Is Beautiful! *Michael Slattery*
The Season Was Late, The Hunt Was Hard *J.D. Smith*
To South America *Lynn Meisch*
The Great Gaming-House *Kelly Yeaton*
The Entire History of Man *my*
Dharma Taking Root in the (south) West *Zim*

No. 8, Winter 1975

Local Dependency *Stewart Brand*
The Clothesline Paradox *Steve Baer*
What's Left? Revisiting the Revolution *Jay Kinney*
The Ohu Movement in New Zealand *Elliott Smith*
Nonviolent Direction Action is Alive and Well in Europe
Lee Swenson
Poems *Richard Brautigan*
A Guide to Buying Horse Equipment *Jack Carroll*
Marlon Brando Plans a Whole Earth TV Special
conversation with J. Baldwin and Stewart Brand
Raw Food — Recipes from the Tropics *Alicia Bay Laurel*
Where Did All the Communes Go? *Bill Wheeler*
Confessions of an Ex-Blackjack Player *Rolf Cahn*
Homestead Bicycle Technology *Jim Burgel*
Odd Bodkins *Dan O'Neill*
Access to Synthesizers *J.D. Sharp and Mark Garetz*
African Drumming Kit *Craig Woodson*
The Further Adventures of Huckleberry Finn
Baine Kerr
A Brief Memoir *Anne Waldman*
Ancient Creek *Gurney Norman*
Interview with a Cattle Mutilator *Paul Krassner*
Sporting Deaths *Russell D. Chatham*
The Optimist *Don Carpenter*
Running on Empty *Johnny Popper*
An Abridged Collection of Interdisciplinary Laws
Conrad Schneiker
The Joy of Socks *Tom Jester*

No. 10, Summer 1976

Olbers' Paradox *Lawrence Ferlinghetti*
Jacques Cousteau at NASA Headquarters
Free Lunch Comix and Stories *Dan O'Neill*
On Observing Natural Systems *Francisco Varela in
conversation with Donna Johnson*
Carl Ortwin Sauer 1889-1975 *James J. Parsons*
Theme of Plant and Animal Destruction in Economic
History *Carl Sauer*
A Carl Sauer Checklist *Robert Callahan*
Trees *Jean Giono*
The Hoedads *J.D. Smith*
Environmental Impact Reports *Peter Warshall*
The B & G, The Bomb *Steve Baer*
Three Political Ideas *Paul Maag*
Theory of Game-Change *Stewart Brand*
Some Mice *Robert Horvitz*
Get Down Tonight *Deborah Haynes*
Sex Notes *Kay Weiss*
The Space Crone *Ursula Le Guin*
Memory One: Getting Started in Orygun *David Shetzline*
Winning *Ron Jones*
The Education of Joni Mitchell
Its our very effort to make reality repeatable which
Buddhism calls suffering *Zentatsu Baker-Roshi*

No. 11, Fall 1976

From Present to Future *Herman Kahn with William Brown
and Leon Martel*
The Shift from a Market Economy to a Household Economy
Scott Burns
Future Primitive *Raymond Dasmann*
Biogeographical Provinces *Raymond Dasmann*
Controversy Is Rife on Mars *interviewing Carl Sagan
and Lynn Margulis*
Odd Bodkins *Dan O'Neill*
Boone *Gurney Norman*
Mind/Body Dualism Conference Position Papers
Invitational Paper *Gregory Bateson*
Inside & Outside *Richard Baker-roshi*
Position Paper *Ramon Margalef*
Not One, Not Two *Francisco Varela*
Community Gardening *Rosemary Menninger*
The Foredads *Gary Rurkun*
Effects of Sublethal Exposure to 2,4,5-Trichlorophenoxy-
Acetic Acid *J.R. Felix and Pierre Mortmain Sylvestre*
Underground Architecture *Malcolm Wells*
Cross-Generation Marriage *Theodora Kroeber-Quinn*
Earthshoes & Other Remarks *Ken Kesey*
May 12 *Louise Nussbaum*
A Street Man's Answer to Rape: Humiliate the Raper
Willie "Small Banana" Williams
Animal Stories *J.D. Smith*
The American Anti-Whaling Movement Is Racist
Michael Phillips
Lucy's Blueprints *Lucy Burrows Morley and
Christopher Thompson*

No. 12, Winter 1976-77

Streaming Wisdom *Peter Warshall*
Watershed Form and Process: The Elegant Balance
Robert R. Curry
John Wesley Powell: Conscience of the Colorado
Peter Wild
Watershed Vignettes *Thomas Dunne and
Luna B. Leopold*
Another Watershed Vignette: Lake Tahoe, California
Peter Warshall and J.T. and Carin Winneberger
Diagnosing Stream Health *Thomas Dunne and
Luna B. Leopold*
El Rancho Los Pesares *Jaime de Angulo*
Forests and the Purposes of Man *Roy A. Rappaport*
Headwaters: A Short History of a Backwoods Battle
Randal Lee O'Toole
Whose Trees? Whose Science? *Jack Westoby*
Christo's Running Fence *Mike Alexander,
Barbara and Paul Kayfetz, Peter Warshall*
Healing the Land: The Redwood Creek Renewal
Project *Gerald Myers*
That Which Makes You Move: A Conversation
With Taj Mahal *Lewis MacAdams*
Interspecies Music *Jim Nollman*
Access to Watershed Music *Peter Warshall*
From Urgencies to Essentials *speech by Canadian
Prime Minister Pierre Elliott Trudeau*
The New Alchemists *J. Baldwin*
The Acorn People *Ron Jones*
I would like to write a silence *Anne Herbert*
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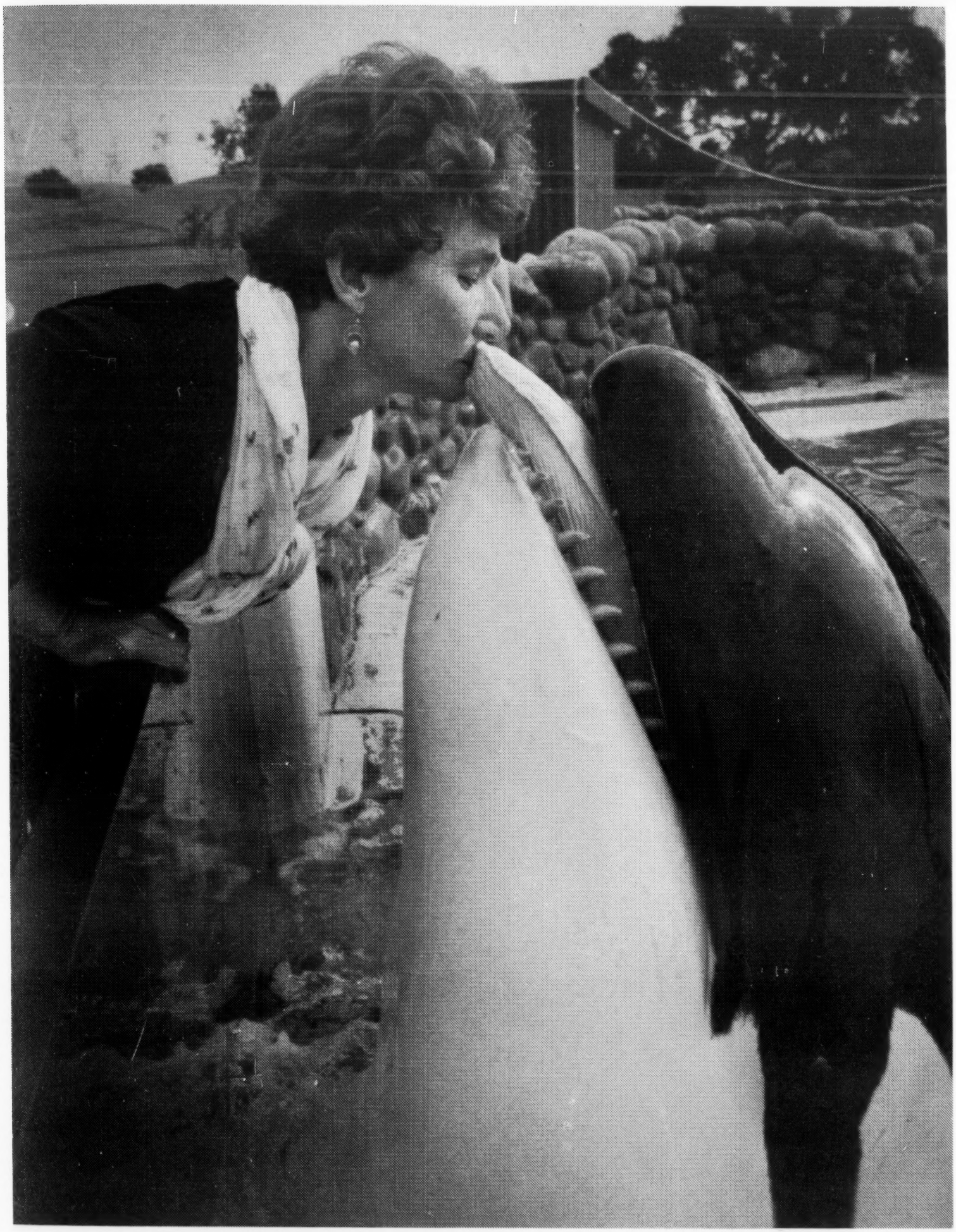

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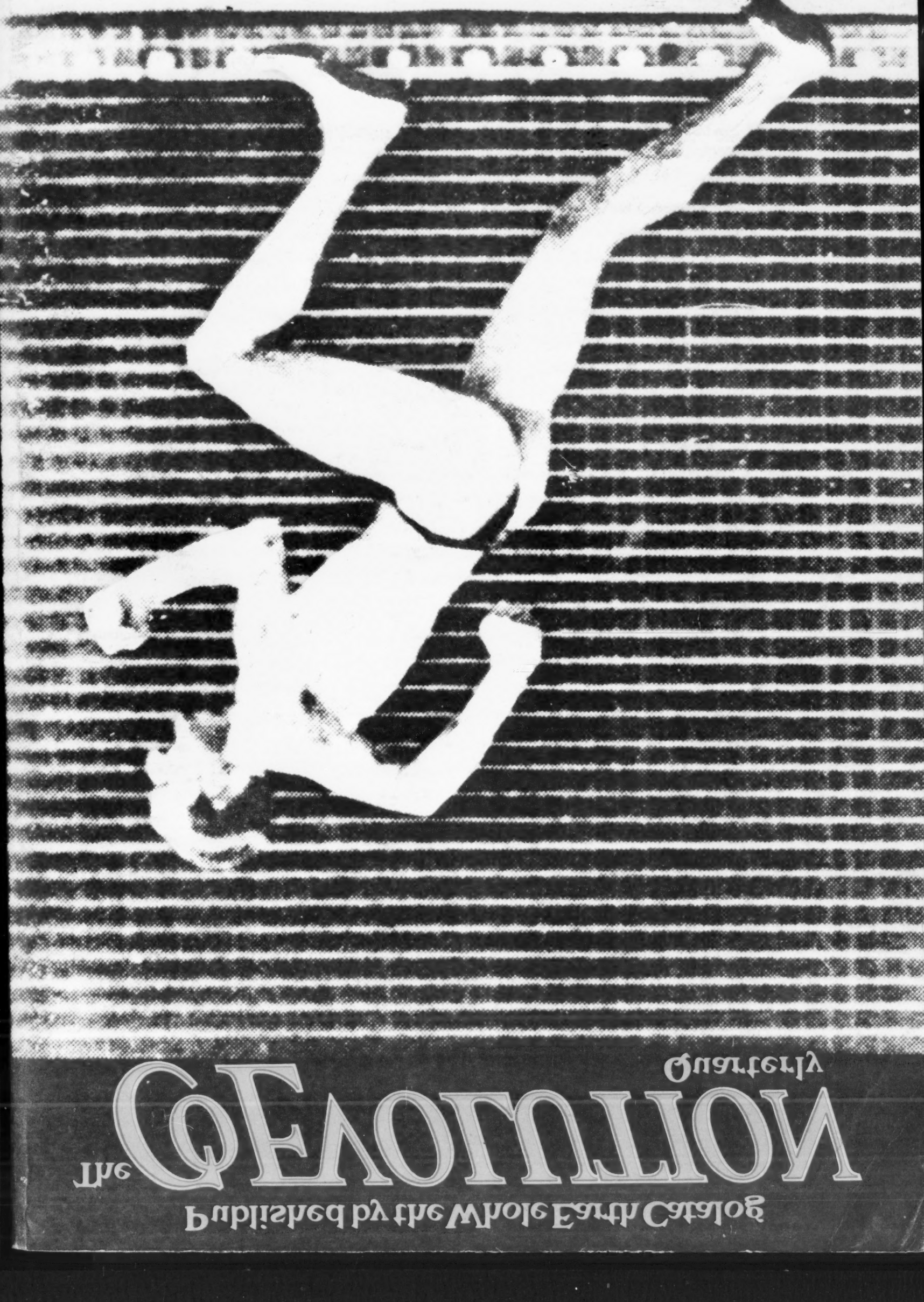

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